

Public Utilities

FORTNIGHTLY



September 24, 1936

Britain Considers Consolidations	- - - -	<i>C. W. Kellogg</i>
A Yardstick That Is Not Air Conditioned	- -	<i>Herbert Corey</i>
Latin America Looks at State Ownership of Utilities	- - - - -	<i>Simon G. Hanson</i>
The Municipal Utilities and Their Mission	- -	<i>R. E. McDonnell</i>
Do Municipal Electric Plants Really Pay?	- -	<i>Henry Earle Riggs</i>
The Conservation Movement in Relation to Public Ownership	- - - - -	<i>Carl D. Thompson</i>
The New Deal Power Program	- - - -	<i>Kendall K. Hoyt</i>
The "Hydro" of Ontario	- - - - -	<i>William H. Onken, Jr.</i>

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There is a Silex to fit every purse in your town. Pyrex brand glass, guaranteed against heat breakage. Priced from \$2.95 to \$10.

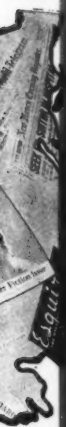
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CHECK

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Now you can get facts about your tire costs in a new, simple, accurate way.

Goodrich has developed a service called "The Truck Tire Calculator" for 1½-ton trucks. With this anyone, without previous experience, can determine

1. The probable life of his tire equipment
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4. What truck tire costs should be



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Instructions for easy calculation of tire changeovers; changeover guide, including data on maximum payload of 131-inch and 157-inch wheelbase trucks; tire sizes and inflation pressures; rim sizes; dual spacing; and makes of trucks on which various combinations are possible.

Points Out Waste

Of special interest is a section devoted to wheel and rim problems, a data table on dual spacing for pneumatic tires and a load and service diagram illustrating the effect of overloading on the ultimate service of a pneumatic tire.

A full page is devoted to a table giving "Cost Expectancy" of tires, showing the

cost of 100% service, as well as lowered costs when the percentage is raised by excellent care and maintenance of tires.

These two tools have increased tire service as much as 50% on utility operations. Why not get the same benefits for your trucks?

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Public Utilities Fortnightly



VOLUME XVIII September 24, 1936 NUMBER 7

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P This magazine is an open forum for the free expression of opinion concerning public utility regulation and allied topics. It is not the mouthpiece of any group or faction; it is not under the editorial supervision of, nor does it bear the endorsement of, any organization or association. The editors do not assume responsibility for the opinions expressed by its contributors.

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Pages with the Editors

CONSOLIDATIONS of electric properties in the United States have been in progress so many years that the public interest is chiefly in the reaping of resultant economies and in control of the gigantic organizations operating them. In Great Britain, however, the desirability of consolidations has been recognized but accomplishment is still in the future.

THE McGowan committee, the report of which was published in our August 13th issue, sought a remedy for high distribution costs. One of its suggested cures is consolidation of plants. We are privileged to present (beginning page 335) comments on the report of the McGowan committee by one who recently studied the British electric utilities, CHARLES W. KELLOGG, newly elected president of the Edison Electric Institute. His long years of experience in the utility business qualify him as an expert commentator.

MR. KELLOGG, born in Philadelphia February 27, 1880, was educated at the Massachusetts Institute of Technology, where he received his B. S. degree in 1902 and his Master's degree in 1903. He joined the Stone & Webster organization and, after managing the Edison Company of Brockton, Massachusetts, he spent nine years in Texas, at various times serving as manager of the electric light and power properties in El Paso and in the Gulf Coast region and as

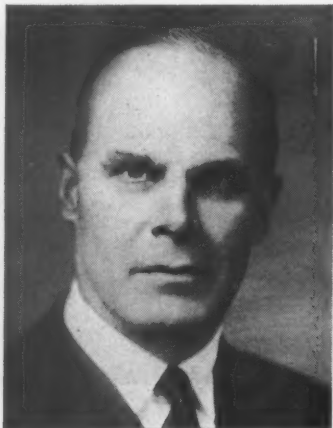
manager for several years of the Texas Securities Department. He operated properties in Keokuk, Iowa, from 1914 to 1919 as manager of the Mississippi River Power Company (the Keokuk dam). He was also Middle West district manager for Stone & Webster. Returning to the East in 1919, MR. KELLOGG was engaged in expert work on reports, appraisals, and other matters for the Stone & Webster organization, including work for the Interborough Rapid Transit Company of New York and the Conowingo project on the Susquehanna river.

As head of the Engineers Public Service Company since 1925, MR. KELLOGG won recognition throughout the industry for his exceptional qualifications in utility leadership, in matters of both administration and policy. He became chairman of the board of Engineers Public Service Company, a public utility holding company controlled by Stone & Webster in 1934.

THE official yardstick, kept in an air-conditioned vault at Washington under conditions that insure that its length does not vary is contrasted by HERBERT COREY with the TVA measuring rod (beginning page 341). Differing conditions and cost computations peculiar to the TVA, in the opinion of the author, lead him to conclude that instead of a measuring device the TVA yardstick is a whimsical device. MR. COREY, well known as a magazine writer, war correspondent, and book author, who has been a frequent contributor to the *FORTNIGHTLY*, is too well known to require further introduction.

How does a publicly owned power plant get along in a country dedicated to state socialism? This question is answered by SIMON G. HANSON (beginning page 349) in a discussion of state ownership of utilities in Latin America, particularly in Uruguay, which for many years has been embarked on a program to eliminate private, and especially foreign, enterprise.

THE author is lecturer on Latin American affairs at American University. He spent the summer of 1935 in Uruguay gathering material for a book entitled "An Economic History of Uruguay," which is to be published in the spring of 1937. He has also written for the *Journal of Political Economy*, *Hispanic American Historical Review*, and other publications. MR. HANSON was educated at the University of Vermont, where he received his degree of Bachelor of Science in 1929 and



C. W. KELLOGG

"... our own tremendous development may cause us to feel that we have nothing to learn from other nations."

(SEE PAGE 335)



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degree of Master of Science in 1930. He received from Harvard University in 1933 the degree of Master of Arts.

As the senior member of the firm of Burns & McDonnell Engineering Company, R. E. McDONNELL is well equipped to discuss the municipal utilities and their mission (beginning page 354). His organization has for thirty-nine years specialized in public utility problems, serving principally the municipalities in the design and supervision of electric, hydraulic, and sanitary utilities. It has also engaged in appraisals and rate investigations for municipalities and utilities.

THE author, in the belief that municipal plants are grossly misunderstood, gives facts and figures relating to rates, appliance use, and other matters in support of his opinion that the existence of municipal utilities is fully justified. He vigorously disagrees with those critics who call municipal ownership socialistic or communistic.

MR. McDONNELL is a native of Montana, an engineering graduate of Stanford University, and the author of a number of articles on public utility questions. The booklet entitled "Results of Municipal Lighting Plants," published annually by Burns & McDonnell, is well known as a compendium on the subject.

WHETHER municipal electric plants really pay is an important question for taxpayers. The eminent utility valuation expert, DR. HENRY EARLE RIGGS, brings to bear upon this question a long experience with

public utility matters (beginning page 363). DR. RIGGS, who grew up as an old-line Democrat in a state which was strongly Republican, declares that he early learned of "Wall Street," the "trusts," and the "interests" and a lot of other hobgoblins used by politicians; but after being engaged in private engineering practice, he is confident that he knows fairly well the strong points and the weak points in our city and village administrations. For sixteen years he worked principally for the public in sixty to eighty communities large and small in Ohio, Michigan, and Indiana.

DR. RIGGS was born in Kansas in 1865. He graduated from the University of Kansas in 1886 and then began his career in railroad engineering. He became professor of engineering at the University of Michigan in 1912, from which position he retired in 1932 with the title of professor emeritus, in order to devote himself to consultation work, particularly in utility valuation proceedings.

CONSERVATION and utilization of natural resources is a cause which has been espoused by many leaders in this country and has received the benediction of the public at large. Advocates of public ownership of public utilities believe that conservation can be linked with public ownership and best obtained in that way. No one is better able to present the views in favor of public ownership than DR. CARL D. THOMPSON, who writes on the conservation movement in relation to public ownership (beginning page 393).

DR. THOMPSON in directing the activities of the Public Ownership League of America



R. E. McDONNELL

"The record of the municipal plants, themselves, is the best propaganda that the municipalities can offer as to the success of public ownership."

(SEE PAGE 354)



HENRY EARLE RIGGS

"I am convinced that much better results can be obtained from operating organizations which are responsible to a competent private management."

(SEE PAGE 363)

HOW CENTRAL ILLINOIS GAS AND ELECTRIC CO. HANDLES APPLICATIONS AND SERVICE ORDERS

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found it replaces as many as fourteen separate records and files. Writing and filing of applications is eliminated entirely. Positive control is provided over inactive meters, meter-testing, and non-payment cut-offs. Clerical expense is reduced all along the line.

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maintains a staff of experienced professional supervisors to guarantee that your installation is complete and accurate in every detail. As a result, your installation costs are greatly reduced, your personnel expertly selected and trained, your operating procedure organized and manual prepared... all without disturbing your present routine.

When it costs nothing to get full details, why not investigate the Customer Service Record now. Simply phone your local Remington Rand office or write Remington Rand, Buffalo, New York.

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has had occasion to speak and write extensively on this subject. Born in Berlin, Michigan, March 24, 1870, DR. THOMPSON achieved his A.B. degree from Gates College in 1895; his B.D. degree from Chicago Theological Seminary in 1898; and his M.A. from the University of Chicago in 1900. He was a minister in the Congregational Church until 1901; a member of the House of Representatives of Wisconsin from 1907 to 1909; city clerk of Milwaukee from 1910 to 1911, and thereafter the directing genius of the Public Ownership League of America.

THE New Deal power program is divided by KENDALL K. HOYT into three phases: construction, subsidy, and attack upon private industry (beginning page 402). He searches the background of the present movement, pointing out that the "Power Trust" issue was tree-ripened and ready to fall into the laps of the politicians and the professors when the New Deal was swept into office three years ago.

MR. HOYT, who is a civil engineer, over the past several years in Washington, has written extensively on power subjects, mainly for trade magazines circulating within the industry.

HE was employed in the Washington office of the Tennessee Valley Authority on industrial surveys, and his early experience includes water flow investigations on power streams for the Geological Survey. As a reporter, research man, and observer at the Nation's capital, he has observed the growth of the Federal power program through its successive stages.



CARL D. THOMPSON

"It is not enough that we should conserve our natural resources. We must utilize them. Conservation without utilization is sterile."

(SEE PAGE 393)



WILLIAM H. ONKEN, JR.

"... the conclusion is inescapable that private corporate enterprise in Canada... has far outstripped government enterprise in the public utility business."

(SEE PAGE 410)

THE Hydro of Ontario comes into most discussions of the respective merits and demerits of public and private operation of electric utilities. In this issue we present to our readers an analysis of the Canadian situation which includes a comparison of governmental and private corporate enterprise in Canada. The author is WILLIAM H. ONKEN, JR., president of the American Security Owners' Association. This association is a medium for collective action by owners of securities for the purpose of maintaining and improving the credit of the corporations issuing them. MR. ONKEN was formerly editor of the *Electrical World* and for many years an outstanding figure in the electrical industry. He has traveled extensively in North America and Europe, studying the expansion of the electrical industry.

AMONG the important decisions reprinted from *Public Utilities Reports* in the back of this number, may be found the following:

THE New York commission, in ordering an immediate reduction in telephone rates, disposes of questions relating to interzone charges, hand-set charges, extended area service, excessive reserves, seasonal telephone service, and tie line rate differentials. (See page 443.)

THE next number of this magazine will be out October 8th.

The Editors

NEW I-T-E SWITCHBOARDS

FOR CENTRAL STATION SERVICE

Study of any new I-T-E switchboard built or building for a public utility company shows how closely modern station requirements have guided design. New air circuit breakers and controls as well as the protective structure are for central station use and are especially adapted to the particular job

To Protect Auxiliaries in a Southern Power Station

This board houses eighteen hand-operated circuit breakers in individual cells, rigidly mounted with bolted connections to bus bars, and three of the withdrawal type on pantograph mountings. Access to bus compartment is provided by a door at each end of structure.



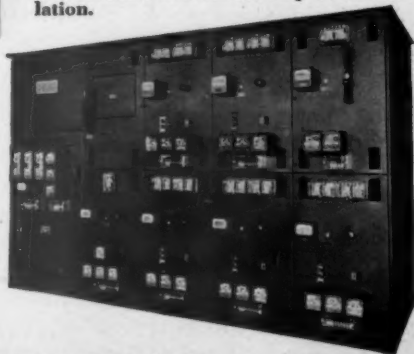
For a Northwestern Utility's Station Auxiliaries



14 K-type circuit breakers, 13 electrically-operated, 1 hand-operated, enclosed in an I-T-E Multumite switchboard typical of modern dead-front all-steel construction.

For a Large New England Utility

8 solenoid-operated air-circuit breakers mounted on pantographs with 1 truck-type circuit breaker in left-hand compartment. Relays front mounted on hinged doors. New Uniflow louvers for improved ventilation.



Complete details of I-T-E steel switchboard construction will be furnished on request either by the factory or through I-T-E engineers located near you.

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I-T-E CIRCUIT BREAKER CO., PHILADELPHIA, PA.

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REPRINTS FROM PUBLIC UTILITIES REPORTS

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The machine automatically counts the number of bills added in each register, for proof and statistical purposes.

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Faster carriage operation speeds up the entire billing job.

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Remarkable Remarks

"There never was in the world two opinions alike."

—MONTAIGNE

COLONEL PHILIP B. FLEMING
U. S. Army Engineer.

"I think Quoddy is going to be finished some day."

CARTER GLASS
*United States Senator from
Virginia.*

"The government's nose is in all sorts of business now."

L. W. BALDWIN
*Chief Executive Officer, Missouri
Pacific Railroad.*

"Management must keep abreast of demand—not lag behind it nor move too far in front of it."

JOSEPH P. KENNEDY
*Former Chairman, Securities
and Exchange Commission.*

"I believe the statute (Revenue Act of 1936) . . . is premised upon a fallacious economic principle."

DAVID LAWRENCE
Political commentator.

"Nor can I understand how all the power (at Grand Coulee) is going to be used if its sale is restricted to municipal governments or districts."

JOHN A. STRALEY
Contributor, Forbes Magazine.

"'What,' asks a reader, 'is the difference between a Republican and a Democrat?' Well, a Republican is usually checking government cash—."

SIDNEY HILLMAN
*President, Amalgamated Clothing
Workers of America.*

"The shorter work day and the shorter work week must be written into the law of the land if the millions of unemployed are ever to return to work."

JOHN W. DAVIS
*In an address to the New York
State Bar Association.*

"If experience teaches anything, it is that of all methods of government, bureaucracy is the least responsible, the least intelligent, and the most arrogant and tyrannical."

FRANKLIN D. ROOSEVELT
President of the United States.

"Some of the laws which were enacted were declared invalid by the Supreme Court. It is a notable fact that it was not the wage-earners who cheered when those laws were declared invalid."

SAMUEL O. DUNN
Editor, Railway Age.

"The public does not want government ownership, and it will be avoided if the public will give the railways a fair opportunity to regain their earning capacity and credit under private management."

New CE Units for-

The New York Edison Company, Inc.

Waterside No. 2 Plant

Capacity—500,000 lb
Design Pressure—1400 lb
Total Temperature—900 F.

CE PRODUCTS

All types of

BOILERS

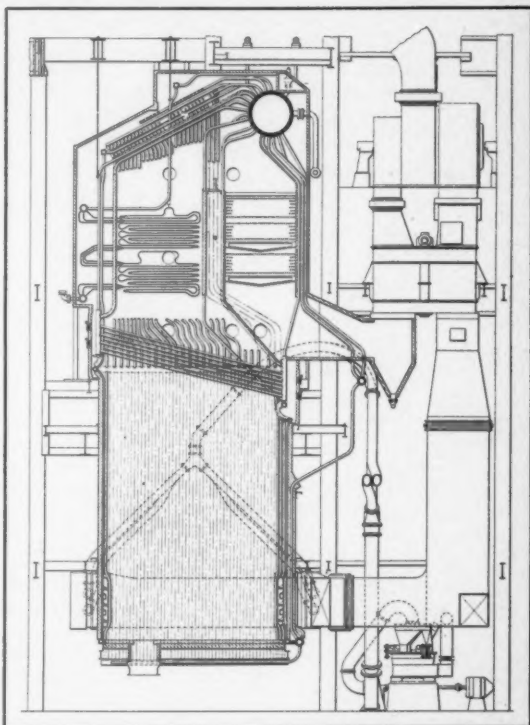
STOKERS

FURNACES

PULVERIZED FUEL
SYSTEMS

HEAT RECOVERY
EQUIPMENT

Fabricators of pressure vessels,
tanks, etc., welded or riveted
in carbon, alloy or clad steels



● The above illustration shows one of the two new CE Units now in course of manufacture for the Waterside No. 2 Plant. Each of these units will replace twelve of the 96 boilers originally in this station. These units are comprised of the following equipment: CE Cross-Drum Sectional Header Boiler; CE Water Cooled Furnace with slagging bottom; Elesco Superheater and Economizer; Ljungstrom Air Heater; two CE-Raymond Bowl Mills.

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Canadian Associates: Combustion Engineering Corp. Ltd., Montreal

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RALPH O. BREWSTER
U. S. Representative
from Maine.

"It is obvious that \$29,000,000 is a negligible amount to go into such a project (Quoddy) when one contemplates the allocation of \$50,000,000 and \$75,000,000 for projects that are practically unheard of."

RAYMOND GRAM SWING
Radio commentator.

"Private broadcasting will not be saved without a first-class job of editing. This America is not getting. And if we lose a genuinely independent radio, we lose the spoken word in the service of democracy."

GEORGE W. NORRIS
United States Senator
from Nebraska.

"If we could . . . let power pay its part, irrigation pay its part, let navigation pay its part, and flood control pay its part, we would cheapen it for every one of them and make it possible to bring about an improvement that we probably could not get in any other way."

ERNEST GALARZA
Mexican engineer.

"It seems to me that the (Mexican electrical) prospect is not cheerful; for, given the standard of living and the average wage scale of more than 10,000,000 Mexicans, it appears improbable that the electrical age lies just around the corner for them."

CARL SCHOLZ
Mining engineer.

"Water power has been growing slowly but consistently. It is just like one of these floods that come on you, and you never know where they are going to stop. Now we are just getting to a higher point, and that is what we are afraid of, that it will interfere with our business."

OLIVER L. LAWRENCE
Member of British Royal Institute
of International Affairs.

"There is one American example in which economists and industrialists in Great Britain have been very considerably interested, namely, in the TVA. Britain is faced with her own intractable problems of regional development in the 'decayed areas' of South Wales, the northeast coast, and in Scotland."

JOHN D. BATTLE
Executive Secretary, National
Coal Association.

"From the standpoint of the coal industry, it is of small consequence which valley authority takes over the Ohio valley area. We are opposed to either alternative. In either case we are confronted with an epidemic of hydro-power promotions at the expense of coal, and in the very heart of the coal regions."

HUGH S. MAGILL
President, American Federation
of Investors, Inc.

"When the Tennessee Valley Authority was started, you know, speeches were made and statements were made that it was to be a vast power-producing undertaking. Everybody spoke of way up in the billions of kilowatt hours, and so forth. Then, when they discovered that that was unconstitutional, they went before the court and swore that the production of power was merely incidental."

Switch!

... TO DOOR EFFICIENCY



KINNEAR MOTOR OPERATED DOORS operate like other plant equipment

Time saved is money made. That's why electric power is so indispensable in every modern plant . . . and equally indispensable for door efficiency. To open or close service doors with a conveniently located operating button means the same savings in labor and time as electrically controlled machinery. And when Kinnear Motor Operated Doors are remotely controlled from distant stations there's even greater savings. In addition to compact, rugged power equipment of proved efficiency, Kinnear Steel Rolling Doors offer other qualities important to plant economy . . . convenient upward action . . . saving of space . . . out of the way of damage . . . and durable, flexible steel construction. Let us tell you more about this avenue for cutting costs.

Write Today For Complete Catalog

The KINNEAR MFG. CO.
2060-80 Fields Ave. Columbus, Ohio.

Please send us descriptive literature on Kinnear Motor Operated Doors. We shall also be glad to receive a complete catalogue describing the various types of Kinnear Upward Acting Doors.

Name

Address

City State

STEEL ROL-TOP DOORS
STEEL ROLLING DOORS
LABELED FIRE DOORS
STEEL BIFOLDING DOORS
MOTOR OPERATED DOORS

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BANG
and it did not
BREAK



EVEREADY
Trade Mark
**INDUSTRIAL
FLASHLIGHT**

"Stands the Gaff"

General all-around hard usage in industrial service has shown conclusively that the "EVEREADY" Industrial Flashlight can "Stand The Gaff". Bounced around on concrete floors and many other places are everyday shop experiences and each time this "EVEREADY" has come through unmarked. Its bright beam does not even flicker. The fact that it has no exterior metal parts is vitally important when working around exposed electrical connections and "hot" wires.

NATIONAL CARBON COMPANY, INC.

General Offices: New York, N.Y. • Branches: Chicago, San Francisco

Unit of Union Carbide **UCC** and Carbon Corporation

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This is the GREATEST TRUCK YEAR IN ALL CHEVROLET HISTORY

Truck buyers prefer Chevrolets because they're outstanding in **PULLING POWER, OPERATING ECONOMY, LOW PRICE**



CHEVROLET
FOR ECONOMICAL
TRANSPORTATION

Thoughtful buyers of trucks and commercial cars are displaying overwhelming preference for Chevrolets. . . . Because they know that Chevrolet trucks have the *greatest pulling power* of any truck in the entire low-price range . . . because they know that Chevrolet trucks are the *most economical* for all-round duty . . . and because they know that these big, powerful Chevrolets sell in the *lowest price range*. . . . Visit your

nearest Chevrolet dealer today . . . ask for a thorough demonstration . . . and then choose Chevrolets — *the world's thriftiest high-powered trucks!*

CHEVROLET MOTOR CO., DETROIT, MICH.

NEW PERFECTED HYDRAULIC BRAKES • NEW FULL-TRIMMED DE LUXE CAB • NEW HIGH-COMPRESSION VALVE-IN-HEAD ENGINE • FULL-FLOATING REAR AXLE ON 1½-TON MODELS

GENERAL MOTORS INSTALLMENT PLAN — MONTHLY PAYMENTS TO SUIT YOUR PURSE

CHEVROLET TRUCKS

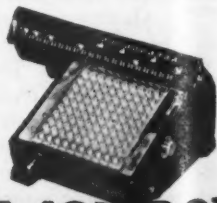
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CLEAR THE WAY !

Choked-up figures slow down a whole business

Figures pour over the desks of every business, every hour of every day. To keep them moving speedily, smoothly, and at low cost, has been Monroe's function for twenty-four years. Today, Monroe offers 197 different models: calculators, adding listing machines, bookkeeping machines, check writers and signers. Each Monroe is compact enough to use right on the desk where figures originate. Each one has the famous "Velvet Touch" keyboard to take the strain from figuring. Whether you use one Monroe or a thousand, your investment is protected by a nationwide figure service, operating through 150 Monroe-owned branches from coast to coast. Try a "Velvet Touch" Monroe on your own figures. The nearest Monroe branch will arrange it without obligation. Write to us for a free copy of the booklet, "If Only I Could Work On Your Desk For An Hour." Monroe Calculating Machine Company, Inc., Orange, New Jersey.



MONROE

ADDING-CALCULATOR
Model LA-6. Portable, weighs only 10 pounds. Completely automatic multiplication and division.

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TELL THEM and you'll SELL THEM



Lamps, toasters, percolators—they all need tags to put your sales message across at the point of purchase. For a tag on your product

1. IDENTIFIES
2. GUARANTEES
3. INSTRUCTS

We make a great variety of tags of all kinds. If you could see samples of our latest work you would find inspiration for tags in your business. Just fill in the coupon and we'll be glad to send you some and prices without obligation.



Dennison's

Dept. NL

Framingham, Mass.

Send me a few samples of tags that tell them. No obligation of course.

NAME _____ POSITION _____

COMPANY _____

CITY _____ STATE _____



The High Cost of **LOW POWER FACTOR**

WE have spoken so often in these advertisements of the high cost of low power factor operation of customers' plants that the following example should bear witness to this point. It is deduced from one of our own case studies, an investigation in a metal working plant to determine the comparative costs of Modern Group Drive vs unit motor drive for 36 machines:

	<i>M. G. D.</i>	<i>Unit Motor Drive</i>
Connected motor load in H.P. _____	890	1554
Power factor _____	.836	.642
Annual current consumption in K.W. hrs _____	617,000	655,000
Utility Revenue _____	\$6,712.00	\$7,120.00 (A)
Customer's Real Power Cost per year _____	\$15,865.90	\$25,195.57 (B)
Customer's Investment in Power Transmission _____	\$56,105.97	\$107,703.82

The \$408.00 additional annual revenue to the utility (A) actually costs the customer \$9,329.67 per year (B). What it costs the utility in cash and loss of good will we do not know. It's worth investigation, however.

We invite your coöperation in our efforts to educate industrial plant executives to the engineering and economic advantages of applying The Right Drive to Every Machine.

*POWER TRANSMISSION COUNCIL

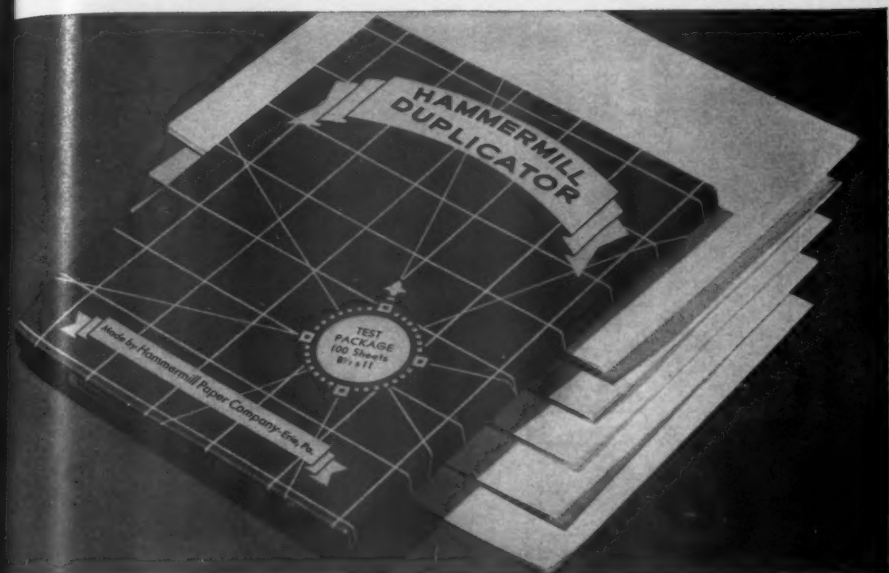
75 State Street, Boston, Mass.

*A research association of producers and distributors of power, power units and mechanical equipment for the transmission of power.

A POWER DOLLAR SAVED IS A PROFIT DOLLAR EARNED

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BETTER LOOKING COPIES FOR DUPLICATOR USERS



prove it . . . 100 SHEETS FREE

A NEW ADVANCE has been made in paper making—one you should know about if you use a duplicating machine in your office. This new paper is called Hammermill Duplicator and has been developed from years of testing under actual commercial conditions.

For one thing, this duplicator paper can be used on either the familiar gelatin type or the newer spirit type machine. On the gelatin machine, Hammermill Duplicator produces copies that look the same—no rapid fading away toward the last.

On the spirit duplicator, this paper provides brilliant copies with a minimum of fluid. More-

over, it reduces curling and avoids blurring.

Available from your printer or stationer in white, blue, buff, pink and salmon, colors that match Hammermill Bond and Hammermill Bond Envelopes.

SPECIAL OFFER—to acquaint you with this new advance in paper making, we'll send you without obligation, 100 sheets Free. All we ask is that you attach to your request a sample of your present duplicator work.

[If you use a Mimeograph or Multigraph machine, say so, and we'll send you special test packets of the correct Hammermill Paper.]

If you prefer, omit coupon and simply write us on your letterhead

**HAMMERMILL
DUPLICATOR**
(WATERMARKED)

Hammermill Paper Co., Erie, Pa.

PUPB-24

Gentlemen: Please send me Free a 100-sheet Test Packet of Hammermill Duplicator Paper.

Name _____

Position _____

Check type of machine used ☐ Gelatin
☐ Spirit

(Please attach coupon to your business letterhead)



KERITE

Out of the experienced past, into the exacting present, KERITE wires and cables, through three-quarters of a century of successful service, continue as the standard by which engineering judgment measures insulating value.



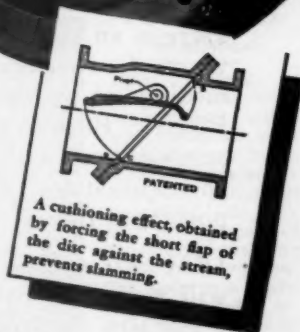
THE KERITE INSULATED WIRE & CABLE COMPANY, INC.
NEW YORK CHICAGO SAN FRANCISCO

FLANGE JOINTS NEVER OPEN

When Chapman Non-slam Check Valves close!

There's no jar or hammer along the line when these Non-Slam Check valves close. Slamming is made impossible. Pipe joints are made safe against leaks. For Chapman has put an end to valve-slam with a balanced disc that rides steadily in the flow; falls rapidly as the stream slows up; closes the instant it stops. The top flap, pushed against the stream, cushions the disc to a quiet closure.

When these valves go on the line—head and power losses, maintenance and replacement costs go down. Capacity goes up, for there are no obstructions to disturb flow. For a Check Valve that will save money and grief on any water, gas, air, or oil service, put in Chapman's Non-Slam. Bulletin for the asking.



The CHAPMAN VALVE

MANUFACTURING COMPANY

INDIAN ORCHARD, MASSACHUSETTS

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An IBM Service Bureau

Let this *Fact-finding* Service work for you

Facts and figures that point the way to more efficient and economical management are quickly available through the International Business Machines Service Bureau.

Here is an accounting and statistical organization with years of experience and proved ability. Through the medium of punched tabulating cards and International Electric Bookkeeping and Accounting Machines, this organization will prepare Rate Analysis, Inventories and Valuations, Market Surveys and many other important utility records and reports.

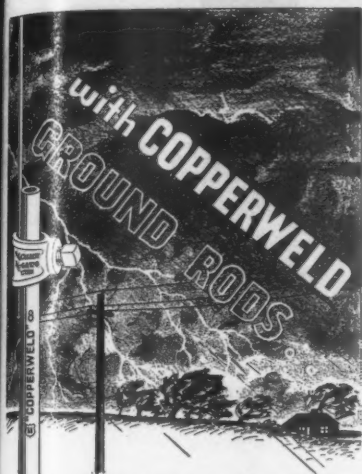
IBM Service Bureaus are located in principal cities and will work with you on a part-time or complete-job basis. Naturally, the strictest confidence is an underlying principle in the handling of all data. Call your nearest IBM office today or write direct for complete information.

INTERNATIONAL BUSINESS MACHINES CORPORATION

GENERAL OFFICES:
270 BROADWAY, NEW YORK, N. Y.

BRANCH OFFICES IN
PRINCIPAL CITIES OF THE WORLD

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PROTECTIVE GROUNDS ARE BETTER EQUIPPED TO DO THEIR PART

Installed out of sight, where periodic inspection is impractical, Copperweld Ground Rods and Grounding Clamps insure the dependability of your protective grounds.

Although Copperweld Ground Rods offer the permanence of copper, because of their rust-proof copper exterior, they are nevertheless theft-proof. Also, they can be driven quickly, without bending, as the steel core of these rods makes them extremely rigid.

**Specify Copperweld Rods
and Clamps—and guard
against substitutions**

COPPERWELD STEEL COMPANY
GLASSPORT PA.

EFFICIENCY ACCURACY ECONOMY

IN THE OPERATION of any power plant, whether steam or water, **ECONOMICAL** operation is dependent on the **EFFICIENCY** of all units.

SIMPLEX METERS, in accurately measuring water input and steam output, provide a permanent and **ACCURATE** check on plant efficiency.

LET **SIMPLEX ENGINEERS** help you to produce power with greater economy.

SIMPLEX VALVE & METER CO.
6761 Upland St., Philadelphia, Pa.

CONVENIENT SAFE ECONOMICAL—

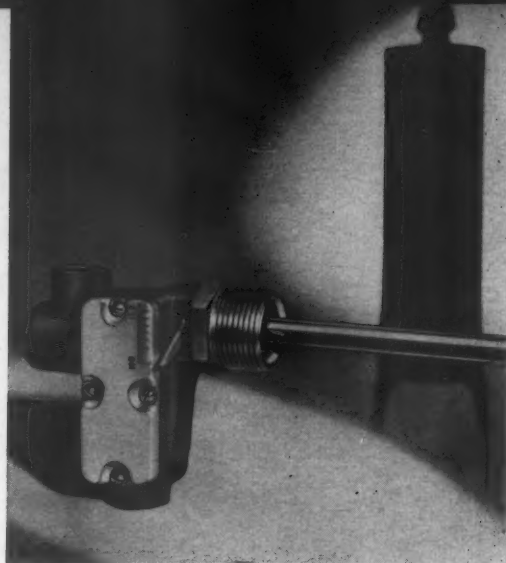
For Better Meter Installation



These cabinets of steel or aluminum for installing socket type meters fit your needs in every detail. Made in singles or multiples, horizontal or vertical. Any desired arrangement of knockouts without extra charge or conduit hubs at a slight addition. Both indoor and outdoor types.

Write today for complete catalogue.

**WALKER
ELECTRICAL CO.**
Atlanta, Ga.



As Is Your Thermostat, So Is Your Storage Heater

You will agree that the success of an automatic storage heater depends in large measure upon the performance of its thermostat. Look well, therefore, to that angle.

Your aim is to increase consumer satisfaction. That means, in the present instance, a thermostat upon which the user can depend at all times—which reduces your servicing to a negligible minimum—which consis-

tently builds good will for you in your community.

The Titan Snap Action Thermostat fulfils these requirements. It is known for its universal reliability even under the most severe conditions. Titans are already standard equipment on most storage heaters approved by the American Gas Association. Their enviable record warrants your complete confidence.

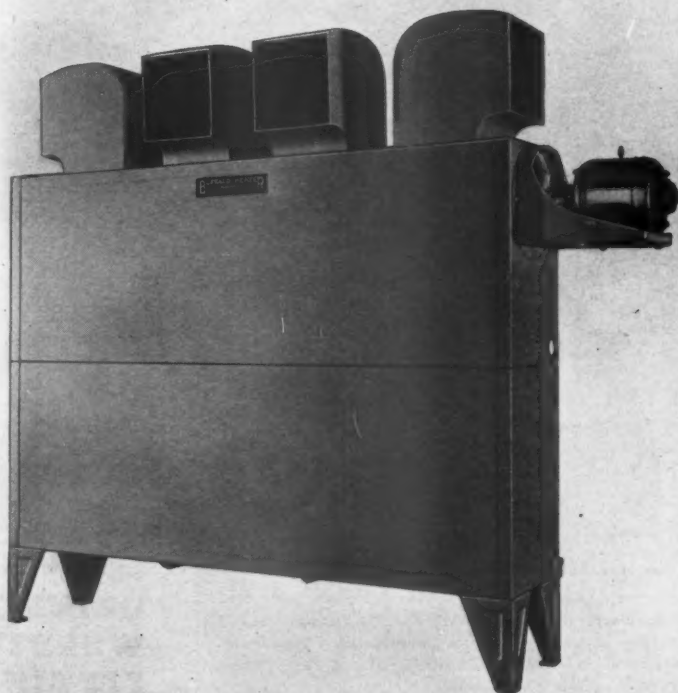
THE TITAN VALVE & MANUFACTURING COMPANY
THERMOSTATS " SAFETY PILOTS " RELIEF VALVES
3205 Perkins Avenue Cleveland, Ohio

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TITAN

**WATER HEATER
CONTROL**

PLENTY of HEAT—where you want it!



Industrial heating can be as efficient as your home heating system, if you select the right units for the job.

The "Buffalo" line is complete, with floor and suspended steam units and floor and suspended gas units; each type made in several sizes.

All models are efficient, practical and QUIET. There are no "gadgets" to require frequent attention, no parts to be replaced.

Buffalo engineers located in all principal cities, will help you select units most satisfactory for your buildings. Write us for bulletins.

BUFFALO FORGE COMPANY, 444 Broadway, Buffalo, N. Y.

In Canada: CANADIAN BLOWER & FORGE CO., LTD., KITCHENER, ONT.

Buffalo

Unit Heaters

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GRINNELL FITTINGS

insure Better Welding



It is easy for a qualified pipe welder to make one, a hundred or a thousand welds by using Grinnell Welding Fittings.

They reduce all welding to plain circumferential butt welds. Their ends are perfectly machined. They cut the "human element loss" to a minimum.

Distinctive features of Welding Fittings made by Grinnell:

Uniform wall thickness

One piece fitting—no seams

Smooth surfaces, inside and outside—no flattening or buckling

Weld easily—they have the same properties as the pipe

Send for a copy of Welding Fittings Catalog for reference

GRINNELL COMPANY
EXECUTIVE OFFICES PROVIDENCE, R. I.
Branch Offices in Principal Cities

GRINNELL WELDING FITTINGS

Include

Elbows and Returns

Tees and Crosses

Reducers

Caps, Sleeves, Saddles

Outlets

Flanges of all types

Special Welding Items
to meet special
conditions

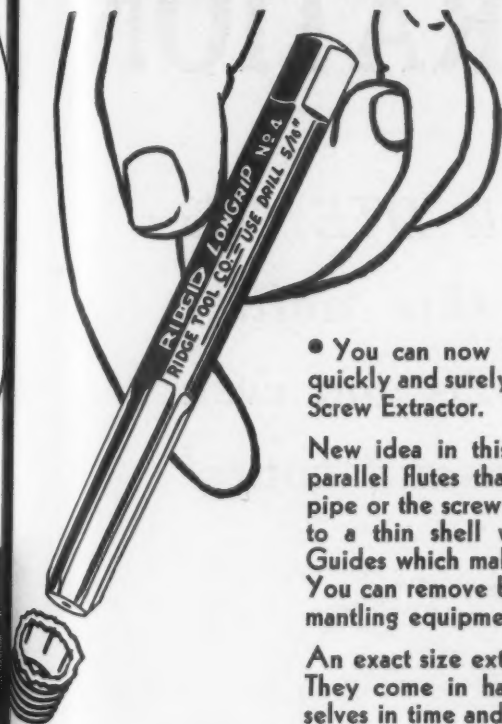
GRINNELL

FABRICATED PIPING AND ALLIED PRODUCTS TO GRINNELL LABORATORY STANDARDS

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DON'T FIGHT ANY MORE WITH BROKEN SCREWS AND PIPE ENDS



• You can now "lick" any broken threaded end, quickly and surely, with a **RIDGID "LONGGRIP"** Screw Extractor.

New idea in this tool—an extractor with straight parallel flutes that you drive clear into the broken pipe or the screw end as soon as you've drilled it to a thin shell with **RIDGID** Drills and Drill Guides which make the job accurate, safe and easy. You can remove broken ends of bolts without dismantling equipment, usually while it is running.

An exact size extractor for each size screw or pipe. They come in handy sets that will pay for themselves in time and work saved and risks avoided in one busy week.

Ask your jobber or write us for the story.

THE RIDGE TOOL CO., ELYRIA, OHIO

**RIDGID
LONGGRIP**
**STRAIGHT-FLUTED
SCREW AND PIPE
EXTRACTORS**



The immense popularity of the **RIDGID** Pipe Wrench is due to the facts of its great strength, its almost indestructibility and the pleasant satisfaction of using it.

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ALWAYS QUICKEST IN SEPARATION

*Gargoyle DTE Oils
retain this ability
for 10, 20 and even
30 thousand hours!*



SOCONY-VACUUM OIL COMPANY, INC.

STANDARD OIL OF NEW YORK DIVISION - WHITE STAR DIVISION - LUBRITE
DIVISION - WHITE EAGLE DIVISION - WADHAMS OIL COMPANY - MAGNOLIA
PETROLEUM COMPANY - GENERAL PETROLEUM CORPORATION OF CALIFORNIA

"Our best salesman never says a Word"



Copyright, 1936, Royal Typewriter Company, Inc.

Put the New Easy-Writing Royal to any test you can think of! Let its performance provide proof of the merits of this great typewriter.

For the New Royal is its own best salesman—master of that most convincing argument of all—perfect results! At its keys, any operator can easily produce *better typing, faster!*

STANDARD OF THE BUSINESS WORLD

That is why the New Easy-Writing Royal is so widely preferred . . . why Royal is now enjoying *the greatest sales of its entire history!*

Invite a demonstration. . . . Compare the Work!

World's largest company devoted exclusively to the manufacture of typewriters.

ROYAL TYPEWRITER COMPANY, INC.
2 Park Avenue, New York City

* Trade-mark for key-tension device

FIRSTS that make ROYAL FIRST!

First in **SPEED** . . . Greater volume! First in **EASE** . . . With Touch Control,* Shift Freedom. Finger Comfort Keys. Nearly a score of exclusive improvements! First in **CAPACITY** . . . Greater volume—enhanced quality! First in **ECONOMY** . . . Lower typing costs throughout! First in **DURABILITY** . . . These New Royals can take it!



ROYAL: WORLD'S No. 1 TYPEWRITER

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The Mountain Comes To Mohammed



WE realize that most merchants do not have the opportunity of visiting the larger cities to see what is being done in the way of store front design and illumination. They do, however, have a keen desire to pattern their establishments after the style leaders. It is to satisfy this desire to follow the leaders of modern lighting and design that the Pittsburgh Plate Glass Company has started its Store Front Caravan on a nation-wide tour.

The Caravan carries twelve scale models showing the most advanced thought in store front styling and construction. Exact to the smallest detail, including exterior and interior lighting effects, these models will graphically demonstrate what can be done with old-fashioned fronts—and the resulting desire for modernization should be mutually beneficial to all those interested in selling lighting and store front improvement.

You will be advised in advance of the Caravan's arrival in your locality so that you will have ample time to arrange for your lighting prospects to view these models. Use the strong selling power of these scale models to assist in closing your sales. Literature minutely describing the lighting and structural features of these fronts will be available for distribution in these meetings.

For further information on the Caravan write the Pittsburgh Plate Glass Company at Pittsburgh.

CARRARA STRUCTURAL GLASS	PITTCO STORE FRONTS	PITTSBURGH PAINT PRODUCTS
PITTCO STORE FRONT METAL		POLISHED PLATE GLASS
PITTSBURGH MIRRORS	<i>glass...metal...paint</i>	TAPESTRY GLASS
PRODUCTS OF		
<i>Paint</i>	PITTSBURGH	<i>Glass</i>
PLATE GLASS COMPANY		

SIMPLE, ISN'T IT?



NOTICE: The triangular wedge formed by the tang and V-bottom collar, which forces the wire into a solid mesh—



- NO set-screw contact...
- NO flattening or separating of wires...
- NO limitation to one size wire...
- NO shearing effect whatsoever...
- NO special tools required to make connection...

NO need for you to search any longer for the **PERFECT** solderless connector—**WE HAVE IT!**

FREE! A large display board, containing mounted samples of **ILSCO** lugs. Sent upon request. Address Dept. **UF**.

ILSCO COPPER TUBE & PRODUCTS, INC.
5629 Madison Rd. Cincinnati, Ohio

BETTER PURIFICATION with **CONNELLY** PURIFYING MATERIALS

Iron Oxide Ore — Commercially Dry — High in Ferric Oxide — Hydrated and Properly Alkalized — Ready for Mixing — Bulk or Bagged.

Iron Sponge — Connelly Trade Name — Ready Mixed; Prepared from Connolly Oxide Ore and best available fillers; Connelly Special Fillers increase life of Sponge.

Connelly Materials are prepared for Maximum Activity and Capacity; Investigate before you Invest; Buy on experience and specifications.

Write for Bulletins

Caloroptic BTU Indicator; H₂S Testers; Regulators for District, Service, and Appliance; Back Pressure Valves; U-Gauges

Connelly

Iron Sponge & Governor Co.

Chicago, Ill. Elizabeth, N.J.

Only... STOWE STOKERS can give you these ADVANTAGES



• Compensating feed—positive rear end air seals—unrestricted coal selection—and much reduced ash pit losses—these are some of the advantages that Stowe Stokers—and only Stowe Stokers can give you. Investigate these exclusive features. Full details and a copy of Catalog No. 10 sent on request.

THE JOHNSTON & JENNINGS CO.

977 Addison Road Cleveland, Ohio
Engineering and Sales Services
in the Principal Cities

Stowe Stokers give you greatest possible control over fluctuating coal prices.

Catalog No. 10 is complete with 14 diagrams, 20 illustrations. Send for one.



STOWE STOKERS

★ Compensating Feed

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Clear



... FLAWLESS GLASS with BRASS BUSHING—the IDEAL insulator

When you "line up" with
HEMINGRAY you line up
these Advantages:

1. Brass bushed smooth threads for insulator pin.
2. Greater mechanical strength.
3. Sustained high dielectric strength.
4. Unaffected by sudden temperature changes.
5. Withstand maximum insulator pin expansion.
6. Never age or deteriorate.
7. Controlled uniformity of product.
8. All surfaces impervious to moisture.
9. Tougher— withstand rough handling.
10. Clear and flawless for easy inspection.

● This rugged new Hemingray Glass Insulator stands up better in all adverse weather conditions. It's *brass bushed*, providing perfect threads for uniform contact with pin—permitting quick, full-length insertion—and safeguarding against pin expansion. Its many all-around advantages clearly point to the brass bushed Hemingray as the ideal insulator for low-cost distribution service. All styles in clear and brown color. Ratings up to 15,000 volts. Write for descriptive bulletin . . . Owens-Illinois Glass Company, Hemingray Division, Muncie, Ind.

HEMINGRAY

INSULATORS

Exide

BATTERIES

—choice of transit systems and bus lines whose policies permit no compromise with quality « «

It is significant that Exide Batteries are used by so many of the country's successful transit and bus lines.

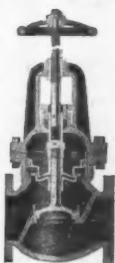
It is not to be implied, of course, that their success is dependent upon their use of Exides. But the operating company that is so meticulous in the choice of its batteries will naturally gauge the selection of all its equipment by the same high standards . . . and the traveling public appreciates the attention paid their comfort and safety.

THE ELECTRIC STORAGE BATTERY COMPANY

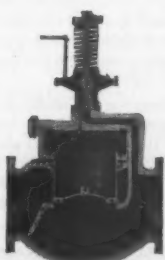
The World's Largest Manufacturers of Storage Batteries for Every Purpose
PHILADELPHIA

PLANT SAFETY

WITH GOLDEN-ANDERSON AUTOMATIC VALVES



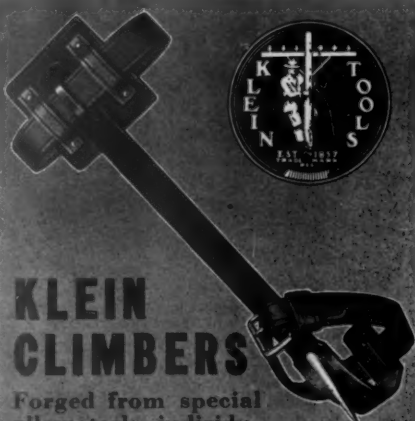
Safety Stop Non-Return valves protect lives and property, automatically, against live steam flows due to boiler ruptures or steam line breaks.



Perfect water level control assured by the Altitude Control Valve . . . the most efficient and dependable automatic valve for tanks, standpipes and reservoirs.

Ask for your copy of catalog for our complete line of automatic control valves

Golden-Anderson Valve Specialty Co.
1380 Fulton Bldg. Pittsburgh, Pa.



KLEIN CLIMBERS

Forged from special alloy steels, individually tempered and tested, Klein Climbers are recognized by linemen and safety engineers alike as possessing the maximum factors of strength, safety and comfort.

Mathies KLEIN & Sons
Established 1857 Chicago, Ill. USA

1936

CAPITAL AND SURPLUS

\$5,000,000

GROWTH

THAT

DEMANDS A.

RECOGNITION

The first Hygrade Lamps were manufactured in 1901. The capitalization of the company was \$3500. Hygrade Lamps entered the market in competition with bulbs produced by the largest manufacturers of electrical equipment in the world. Yet, by the sheer power of their fine quality, they have steadily forced growing recognition of their merits until today demand for them has reached a volume that is the third largest in the country—and the company's capital and surplus is over five million dollars.

A big company—a big name. A concern whose record and product must command respect—and consideration in your scheme. A story of the facts behind such tremendous growth must be worth listening to. It's a story that offers economies as well as quality, a story that is interesting more and more important utilities—particularly on street lighting. A story you ought to know. Ask us to give it to you.

HYGRADE SYLVANIA CORPORATION, SALEM, MASSACHUSETTS

HYGRADE LAMPS

Manufacturers of incandescent lamps for over 30 years.
Makers of Sylvania Set-tested Radio Tubes

1901
CAPITALIZATION
\$3500



SPECIALISTS IN
STREET LAMPS

© 1936, Hygrade Sylvania Corp.

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Style Bar-S All Weather Binder FOR METER READING



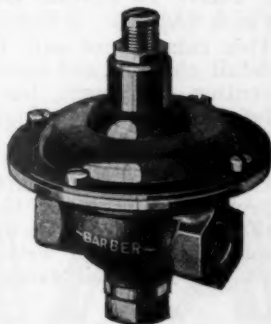
Write us for circular and details. Send sample of your sheet for prices on any quantity of binders.

GRAND RAPIDS LOOSE LEAF BINDER COMPANY
10-16 Logan Street, S. W. « » GRAND RAPIDS, MICH.

A. G. A. Approved BARBER Gas Pressure Regulators Reduce Service Calls and Complaints!

Do the Gas Pressure Regulators *you* use comply with A. G. A. Specification requirements as to pressure drop? Are they listed in A. G. A. Directory of Approved Appliances? How many service calls do you trace to inefficient regulators?

In your own interest, thoughtful consideration of these questions will undoubtedly lead to your adoption of A. G. A. Approved Barber Gas Pressure Regulators as standard equipment on Appliances you sponsor. Barber Regulators have won wide preference because of extremely low pressure drop, compact design, all bronze bodies, and precision of operation.



Made in $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", $\frac{3}{4}$ ",
1", $1\frac{1}{4}$ ", $1\frac{1}{2}$ ", and 2" sizes.

Write for complete literature, prices and discounts on the entire Barber line of Burners and Regulators.

THE BARBER GAS BURNER CO., 3704 Superior Avenue, Cleveland, Ohio
THE BARBER GAS BURNER CO. of MICHIGAN, 4475 Cass Avenue, Detroit, Michigan

PROTECT YOUR MEN WITH "SAFETY-SERVICE" Accident Prevention Equipment



"Safety-Service" Accident Prevention Equipment has been on the market for over twenty years, and is well and favorably known throughout the country.

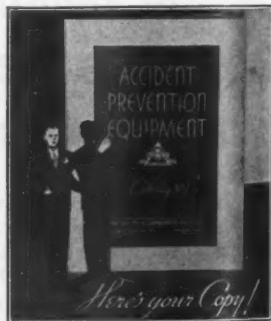
The "Safety-Service Line" covers the complete range of Personal Protection for industrial workers—protection from head to foot. Goggles—Respirators—Helmets—Hoods. Also Coats, Trousers, Jumpers, Aprons, Sleevelets, Gloves, Mittens, Leggings, Spats, Hand and Knee Pads—made of "Sturdy-Weave" asbestos Chrome tanned leather, fire-resisting Cassimer cloth, fire, water and acid-resisting Duck and acid-proof rubber.

Only the finest quality of sturdy, wear-resisting, long-lasting materials are used in the manufacture of all "Safety-Service" Personal Protection items.

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This catalog not only illustrates and describes in detail our full and complete line of Accident Prevention equipment, but it is a book of valuable information that is highly desired by both Safety Engineer and Buyer of Safety Equipment.

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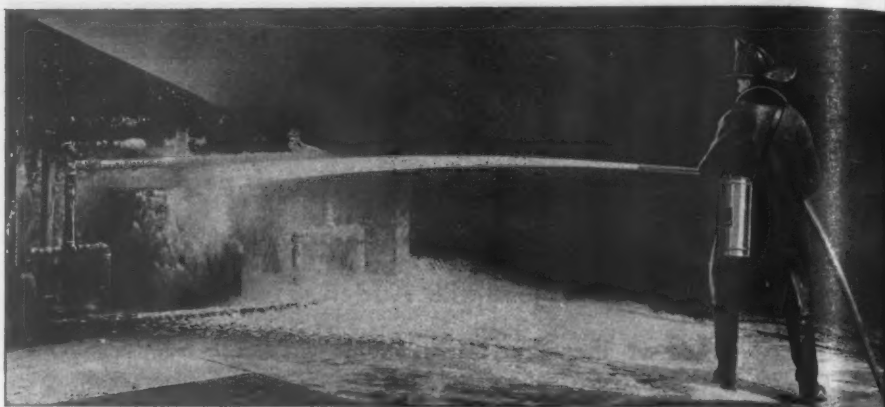
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Utilities Almanack

SEPTEMBER

24	Th	¶ American Transit Association and affiliates end annual convention, White Sulphur Springs, W. Va., 1936.
25	F	¶ Association of Iron & Steel Elec. Engineers concludes meeting, Detroit, Mich., 1936. ¶ New England Water Works Association ends convention, New York, N. Y., 1936.
26	Sa	¶ United States Independent Telephone Association will convene for annual session, Chicago, Ill., October 13-16, 1936.
27	S	¶ American Society of Civil Engineers will hold convention, Pittsburgh, Pa., October 13-17, 1936.
28	M	¶ American Society of Municipal Engineers, International Association of Public Works Officials, and Public Works Congress convene, Toronto, Ont., 1936.
29	Tu	¶ American Gas Association will hold session, Atlantic City, N. J., October 25-30, 1936.
30	W	¶ Association of Gas Appliance and Equipment Manufacturers will hold First Annual Convention, Atlantic City, N. J., October 25-30, 1936. 

OCTOBER


1	Th	¶ Empire State Gas and Electric Association starts annual meeting, Saranac, N. Y., 1936.
2	F	¶ New England Gas Association, Accounting Division, starts meeting, Providence, R. I., 1936.
3	Sa	¶ Massachusetts Federation of Planning Boards begins session, Wellesley, Mass., 1936.
4	S	¶ Institute of Traffic Engineers starts convention, Atlantic City, N. J., 1936.
5	M	¶ Fourth Annual Industrial Materials Exhibit will begin, New York, N. Y., 1936.
6	Tu	¶ Telephone and Telegraph Section, Association of American Railroads, convenes, Washington, D. C., 1936.
7	W	¶ League of Nebraska Municipalities starts convention, North Platte, Neb., 1936. ¶ Electrochemical Society starts fall meeting, Niagara Falls, Ont., 1936. 



Photo by Peter A. Juley & Son

Ships of Columbus

*Pendentive, Cunard Building
New York City*

Public Utilities

FORTNIGHTLY

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SEPTEMBER 24, 1936

Britain Considers Consolidations

Similarity of the basic problems of the British electrical industry with our own indicated by the report of the McGowan Committee on Electricity Distribution.

By C. W. KELLOGG

CHAIRMAN, ENGINEERS PUBLIC SERVICE COMPANY

ABOUT eighty years ago James Russell Lowell wrote his famous essay "On a Certain Condensation among Foreigners." The condensation of which he complained arose, of course, from an imagined superiority on the part of the foreigner, and a consequent belief that he had nothing to learn from us. With the tremendous material progress which we have made in the last eighty years there is danger of the state of mind Mr. Lowell so properly deprecated in foreigners being adopted by ourselves. In matters electrical, for example, there is a possibility that our own tremendous development may cause us to feel that

we have nothing to learn from other nations. This may be an error.

At the end of June this year there appeared in England the report of the McGowan Committee on Electricity Distribution. It is addressed to the Minister of Transport and is signed by H. McGowan, Chairman, and Messrs. John Snell and John Morison. It represents the results of a year's work and the taking of a vast amount of testimony. The similarity of the basic problems it discusses to our own makes the study of the report most worth while for American public utility men. The purpose of this article is to comment briefly on the principal matters covered by the report.

PUBLIC UTILITIES FORTNIGHTLY

The McGowan Report starts off with the thesis that the problems of generating electricity and transmitting it in bulk have been measurably solved and that the problem for the immediate future is that of reducing the cost of distribution. They point out that while generation cost has dropped from 1.94 to 1.04 cents per kilowatt hour, or 46 per cent, in the decade ending 1934, the cost of distribution rose 1.51 cents to 1.63 cents per kilowatt hour between 1925 and 1932, and in the latest year for which figures were available, was still 1.53 cents. They also reach the conclusion that the most effective way of reducing this cost per kilowatt hour is the promotion of greater use of electricity in the home, and that this is more of a business matter than an engineering one. They emphasize in this connection the effectiveness of what they call "two-part" or "all-in" rates, which are our "promotional" rates, and the various devices for assisting the customer to acquire the wiring and equipment necessary to utilize more electricity.

All of this sounds thoroughly familiar to utility men in this country. There are, however, some features of the electric utility situation in England which differ somewhat from our own.

FROM the earliest days of electrical development in England it has been assumed to be a service to be handled by the public authorities, so that even where Parliament (which has the sole authority to issue franchises) has made such grants to companies or individuals they originally provided for purchase by public authorities within a fixed term of years, twenty-one years up to 1888 and forty-two

years afterward. The difficulty which companies encountered in financing when and as the remaining years of a grant became relatively few caused Parliament to realize in 1900 the desirability of perpetual grants, and today about 18.8 per cent of the electricity sold retail in Great Britain is under perpetual grants. On account, however, of the basic theory above mentioned, about 66 per cent of the capital invested in electrical distribution enterprises in Great Britain (based on connected load) is owned by public authorities and 34 per cent by private companies or individuals. In our country the ratio of invested capital is about 94 per cent privately owned and 6 per cent owned by public authorities.

The McGowan Committee reached the conclusion that there are in Great Britain too many small electric enterprises and that lower distribution costs (which is the main purpose of the committee's investigations) can be measurably achieved by widespread consolidations on a regional basis. The figures which they present seem to bear out this conclusion.

IN Great Britain, whose population is roughly twice that of New York and Pennsylvania and whose total area is 7 per cent less than the combined area of these two states, there are no less than 635 electrical undertakings licensed by Parliament and 431 of these sell less than 10,000,000 kilowatt hours per annum. It would seem as though, in the matter of consolidation of electric properties, England stood now where New York and Pennsylvania did before the extensive grouping by the holding companies



Holding Company Regulation Rather Than Destruction

"THE committee's discussion of the holding company sounds almost like home, except that it is more generous in saying that a properly operated holding company performs those very beneficent functions which the committee's plans of wholesale consolidation contemplates, and except that the possible abuses of the holding company (which they set forth in detail), they recommend should be obviated by regulation instead of by destruction."

which was most active in the decade after the World War. The total number of electric enterprises in these two states, with area comparable to that of Great Britain, is now 171. However, 88 per cent of the total business is done by eight systems.

The problem of working out wholesale consolidations of electric properties in Great Britain fairly bristles with difficulties on account of the great variety of rights granted from time to time to different interests and apparently more variety than exists with us as to frequencies and voltage. They do not, however, appear to be plagued as we are in so many cases with a complex of hatred and mutual distrust between municipally and privately owned properties. In the matter of tax exemption, for example (which the British call "derating"), this problem is not, as with us, the creation of unfairly competitive rates through the tax-exemption route, but

of the electric consumers complaining if they believe that an unfair share of the taxation burden is placed on them through their electric rates. In the matter of taxes, the British electric undertakings have to bear a much lower burden than such enterprises in our country.

IN 1923, while American electric companies were expending 8.4 per cent of their annual gross revenue for taxes, the British electric undertakings expended but 6.4 per cent, and in 1934, when the British ratio had grown to 6.8 per cent, electric companies in this country were paying 14.1 per cent of their gross revenues in taxes. In general, the private-public controversy which we have is largely eliminated in England by all grants coming from Parliament and each covering a definite area. This plan has not, however, avoided invidious comparisons in rates where

PUBLIC UTILITIES FORTNIGHTLY

consumers on two sides of the same street (if it is the dividing line between different granted areas) may pay very different rates for service.

The preponderance of municipal operation in Great Britain has no doubt been largely responsible for the comparatively lower stage of electrical development there than here—not due so much to lack of honesty or efficiency in public authorities as to the natural hesitation of any public official to branch out and take bold chances. As Scott once wrote about a certain Highland chieftan:

'Tis better to sit still at rest
Than rise perchance to fall.

The private companies on the whole have been more progressive in extending facilities and in going out aggressively for new business. It is interesting to observe in this connection that the McGowan Committee, in its specifications for plans for general consolidations of electric properties, recommends that in the purchase of private properties the price paid should include not merely cost less depreciation but payment for profits reasonably to be expected to accrue from the remaining life of any existing grant to the selling company.

WITH regard to rates, the committee is definite to the effect that what they call "two-part" or "all-in" rates (that is, a fixed charge plus a low energy rate), should be made an optional feature for residential service throughout the country. With regard to residence rates, the committee called attention to the error of making what they call in England the "flat rate" (what we call the "top rate") too low. They point out that to do so

not only gives an undeserved advantage to the least profitable customer, but also hurts the ability of the company to give to the large user the lower rates to which he is entitled. Although not specifically mentioned in the committee's report, the industry in England has no doubt discovered, as we have here, that nothing helps more effectively in getting top rates down than a constantly larger average use by all customers under the stimulus of inducement, or as the British call them "two-part" rates.

An examination of the most progressive British rate schedules shows 1 cent in summer and 2 cents in winter as the low energy rate of the two-part schedule. If we take $1\frac{1}{2}$ cents as representing the average for both seasons, the figure will be found comparable with that of fuel-generated electricity under similar conditions in the United States.

THE two matters which today are receiving the most active attention in connection with the electric industry in this country may perhaps be said to be rural electrification and the holding company. Both of these are fully treated in the McGowan Committee Report.

In the matter of rural electrification, the problems stated by the committee seem to be identical with ours. This would be bound to be the case, since they are an unavoidable mixture of economics and sociology. The economic features are the low density of rural population (with consequent high unit costs of distribution) and the relatively low buying power (in cash) of the rural population. In Great Britain, too, the natural con-

BRITAIN CONSIDERS CONSOLIDATIONS

servatism of the farmer is perhaps more pronounced than with us. The sociological question is: How far is it justifiable to subsidize the farmer in supplying him with electricity at the expense of the urban consumer? My observation is that the British are inclined to be more conservative on the sociological feature than we are. It will interest American operators to know that the British farmers too have been known to ask somewhat peevishly why they can't get service when the great Grid transmission line goes right by their farm!

The committee's discussion of the holding company sounds almost like home, except that it is more generous in saying that a properly operated holding company performs those very beneficent functions which the committee's plans of wholesale consolidation contemplates, and except that the possible abuses of the holding company (which they set forth in detail), they recommend should be obviated by regulation instead of by destruction.

THE potential abuses which the committee lists are the same as have been brought out in our country:

Excessive charges for construction or management services.

Unnecessary subsidiary companies for contracting with other subsidiaries.

Excessive interest charges on advances to subsidiaries.

Acquisition of or transfer of properties at excessive values.

Excessive security issues.

Improper representation of holding company earnings.

The committee's recommendation of the manner in which to avoid these abuses is the control of new capital issues by holding companies and the official audit of their books by the electricity commissioners of the national government. With regard to control of new capital issues, the committee specifically recommends that the control should be limited to the *terms* of the issue, the companies having "the right to decide for themselves what form any new capitalization should take." In this recommendation they avoided one of the most obvious defects of our Holding Company Bill, which arbitrarily restricts new issues of holding companies to common stock and first mortgage bonds.

The advantages claimed by the committee from consolidations, which they state are now obtained by the larger groups, are:

Improved technical layout and economy of capital.

Greater diversity of load with consequently improved load factor.

Greater financial resources.

Central purchasing.

Highest type personnel, which the smaller undertakings need but cannot afford to hire.



Q "THE preponderance of municipal operation in Great Britain has no doubt been largely responsible for the comparatively lower stage of electrical development there than here—not due so much to lack of honesty or efficiency in public authorities as to the natural hesitation of any public official to branch out and take bold chances."

PUBLIC UTILITIES FORTNIGHTLY

The committee finds that in Great Britain \$6.50 of plant is needed for \$1 of annual gross earnings, and that 50 per cent of the cost of distribution arises from capital charges. From these premises they deduce (1) that the cost of capital is of transcendent importance, and (2) that the only hope for achieving substantial reductions in unit distribution costs is through greater use of energy per consumer.

As to the actual *modus operandi* of the proposed consolidations, the committee suggests that the country should be districted by the electricity commissioners but that each district thereafter should be supervised by district commissioners. They recommend further that the consolidations be made around the more efficient units as nuclei. In order to regularize the situation they propose that the power companies, where they form the nucleus, accept a 50-year grant in lieu of their present perpetual rights, and that they be given an incentive to effort by a sliding scale, relating rates to dividends. The British authorities have evidently learned, from fifty years dealing with electricity, that capital cannot be enticed into the public service and induced to work along progressive lines, involving risks and temporary poor returns, unless assured of earning something from extra effort and risk.

In order further to promote financial stability of the consolidated companies, it is stipulated by the committee that a plan, once agreed and acted upon, could not be subsequently modified without the grantee's consent.

Consolidations are proposed to be compulsory as to properties selling less than ten million kilowatt hours annually but subject to appeal to the Minister of Transport with respect to larger properties. In order that compulsory sale of an electric undertaking shall not be unfair to its owners, the plan provides that they be paid capital cost less depreciation plus severance damages, if any, plus loss of future profits under the existing grant.

In each district is to be set up an advisory committee, consisting of representatives of all electric undertakings in the district, which would consult with the district commissioners as to consolidation plans for the district.

IN general, the atmosphere of the report is one of fairness. It is desired to improve and extend the electric service of Great Britain and to decrease its unit cost. In doing so there is no desire to punish anyone nor to draw invidious comparisons between private and public undertakings. Each, if it is to be purchased, will be paid for all the values it possesses, both present and prospective. The only object in anyone's mind is apparently the public interest. One of the incentives to the greatest efficiency, in addition to the sliding scale relating rates to dividends, is the suggestion of the annual publication by the electricity commissioners of the realm of comparative statistics, showing how each district is performing with respect to various objectives. The working out of Britain's electrical problems along the lines of the McGowan Committee Report will be watched with sympathetic interest in this country.



A Yardstick That Is Not Air Conditioned

Infirmities of the TVA Measuring Rod

THE scientists of the Bureau of Standards would go mad, in the opinion of the author, if they were asked to make use of such a whimsical device as that set up in the Tennessee valley.

By HERBERT COREY

IN an air-conditioned vault at the Bureau of Standards in Washington, D. C., is the official yardstick. The Bureau's field of activity has been largely widened during the last generation but its primary duty is still to preserve:

"The national standards of length, mass, or capacity."

That yardstick is kept under conditions that insure that its length does not vary. No matter what may be the temperature in the street, political or otherwise, it measures precisely 36 inches, no more and no less. Other yardsticks may be put alongside it for comparison, from Chattanooga or Seattle or Passamaquoddy. If they fall short or over-run they are not yardsticks. If they show variations because of the magnetic pull or the passions of the holder they may be natural phenomena or magic wands or jugglers' paraphernalia but they are not yardsticks. If they were to be

used by salesmen either the buyer would be cheated or the sellers would be robbed.

Among all the tragic absurdities of the situation in which the utilities find themselves *vis-a-vis* the national administration nothing is more tragic or more absurd than the statement that the huge government-owned electric plant in the Tennessee valley can be used as a "yardstick" by which the operations of privately owned utilities can be measured. It had its origin either in ignorance of the commonplaces of the business of making and selling electricity or as an invention of the advocates of public ownership in their appeals to the voter. I do not know who first made use of it. The yardstick was first officially recognized in the Milwaukee speech of President Roosevelt on September 30, 1932. He then said:

"It is necessary for government to have a 'birch rod' in the cupboard—

PUBLIC UTILITIES FORTNIGHTLY

two birch rods, in fact. One of them is the development by government of certain great water-power resources, to be used as a yardstick for the benefit of the people."

The picturesque phrase caught the journalistic fancy, and he later amplified it by saying:

"These great government water-power projects will affect not only the development of agriculture and industry and mining in the sections they serve but they will also prove useful yardsticks to measure the cost of power throughout the United States."

WHEN the Tennessee Valley Authority was created by Congress, at the President's direction, the directors of TVA found in the yardstick theory an appealing argument for that adventure, which has been called by Norman Thomas the most completely socialistic experiment made by the New Deal. In a press release of June 30, 1933, they said:

"The Authority intends to use Muscle Shoals as a yardstick to determine the relative cost of public and private power operation."

The three directors and the employees of the Authority are required by law to be men who have complete confidence in the feasibility of the project. In natural consequence their aim was not so much to show the relative costs of public and private operation as to demonstrate that public operation was superior. On November 7, 1933, David Lilienthal, one of the three directors, and general counsel of the TVA, said:

"This is to serve as a yardstick by which to measure the fairness of electric rates."

The TVA made their position more positive when they said on October 13, 1933:

"In view of his (President Roosevelt) sponsorship of this legislation, the yardstick idea must be taken to be definitely a part of the policy embodied in the Tennessee Valley Authority Act."

ON January 5, 1934, in a press release, the TVA recognized that "the TVA is under a duty to operate a public power business, directly and through public agencies, in order to provide a public yardstick of the fairness of the rates charged by privately owned utilities."

The TVA challenge to the privately owned utilities was clear and emphatic.

In a preceding paragraph I called the yardstick idea a tragic absurdity. It is tragic because the voter is being told by direct statement and by repeated implication that the TVA is on a business basis—that it is a "bankable proposition"—and that it is able to undersell its privately owned rivals because it is more economically and efficiently run. If this were a truthful statement the privately owned utilities could have no logical ground of complaint. If they are unable to meet government competition they must either sell out or close down. The utilities say that statement is absolutely false. If they are telling the truth the tragedy becomes apparent, for in that case the money of the taxpayer who supports the government is being used to crush an industry in which the taxpayer has invested his savings and from the profits of which he pays the taxes that support the government.

A YARDSTICK THAT IS NOT AIR CONDITIONED

The yardstick idea becomes farcical when it is discovered that the three men who have been intrusted by the administration with the management of the TVA know so little of the utility business as to believe that a national or even a regional yardstick is a possibility. A moment's reflection will make it apparent that a yardstick is not practicable. The private utilities are as helpless to make one as is the government.

If all electric companies were operated under identical conditions a yardstick would be feasible. It is hardly an exaggeration to say that no two companies, even in the same class, do actually operate under identical conditions. This has been recognized by the level-headed lawmakers who have set up regulatory devices in the various states. Fuel costs vary between town and town; the number of customers differ; labor conditions are not the same. One company may be able to borrow at low rates and install modern fuel-saving boilers and improved dynamos. Its neighbor, fifteen miles away, may find the money-changers in the temple—a phrase often heard in these feverish days—difficult of access because the gentlemen in the temple do not like the way in which the city tax rate is mounting. Every utility company faces a constant but variable need of increasing or improving its distribution system. The in-

vestment in lands and buildings is rarely identical even in companies of the same class. Earthquakes, windstorms, floods, drouths, and other localized devilttries play their parts, but rarely affect many of the same class in the same measure.

It is possible, of course, to determine what is the average rate in a given section and a given class of utilities. If that rate were rigidly applied it would ruin some companies and flood others with unearned money. Rate differences are permitted by the state commissions, not only between town and town but between classes of service, because practical men know that the variations must be compensated. A yardstick for the utilities is only possible between companies operating under precisely similar conditions.

THE TVA is not operating its plant at Muscle Shoals under conditions which even remotely approximate those under which the plants of its privately owned competitors of the Commonwealth and Southern company carry on. Therefore it is not a yardstick.

Nor are there any indications that any one of the huge hydroelectric plants which the present administration is planning will operate under conditions which even remotely approximate those of their privately owned competitors.



Q "THE yardstick idea becomes farcical when it is discovered that the three men who have been intrusted by the administration with the management of the TVA know so little of the utility business as to believe that a national or even a regional yardstick is a possibility."

PUBLIC UTILITIES FORTNIGHTLY

To the extent, therefore, that the administration's hydroelectric program has been sold to the people as a yardstick it is a swindle. That charge is either unforgivable or provable. Suppose the facts are arrayed for examination.

In the Tennessee valley area, comprising portions of seven states, the TVA's competitor is the Commonwealth and Southern company, which has three component companies locally, the Alabama Power Company, the Tennessee Electric Power Company, and the Georgia Power Company. The basic contention of the TVA is that through a politically controlled organization the national administration—any administration, present or future—can operate utilities more honestly, more generously to the consumer, and more efficiently than can private owners. It is apparent that this can only be demonstrated if conditions are equalized.

IF the general taxpayer is called on to pay TVA losses then the Authority's assumption is destroyed. The Federal government might be able to meet a loss to the end of time which would destroy a privately owned company in a decade. The initial investment must be considered, the costs of operation and selling campaigns, the taxes paid to nation, state, and local subdivisions, the return to the investor, whether he be taxpayer or stockholder, the charge-off for depreciation and upkeep, the cost of interest for moneys borrowed either from banks or the national treasury, and various other items. If the TVA can demonstrate that under conditions identical with its competitor it can

make and distribute current at a cost its competitor cannot meet, then it has won its argument.

That statement should be emphasized.

If the TVA can prove that it can do and is doing what it says it can do and is doing then there is nothing more for the privately owned utilities to say.

They're licked.

But if the TVA cannot prove these things then it may be the lovely political experiment which it has been called by Norman Thomas, or it may be an adventure in philanthropy in which the dwellers in the valley profit at the cost of the taxpayer everywhere else. But it is not a yardstick.

THE item of taxes is to be considered first.

In 1935 the TVA paid only \$16,900 on property and funds.

The Tennessee Electric Power Company, one of the three constituent companies of the Commonwealth and Southern, in the same period paid \$2,113,292 taxes.

The actual admitted investment of the TVA at this period was \$151,000,000.

The actual investment of the Tennessee Electric Power Company was in the neighborhood of \$120,000,000.

The paid-out difference in tax costs, to the advantage of the TVA, was \$2,096,392.

If it had been taxed at the rate paid by the TEP Company on its \$151,000,000 investment the TVA would have paid something like \$3,000,000.

The yardstick seems to be badly broken at the first test.

The actual admitted investment of the TVA at this time is made up by



Charge-offs That Affect TVA Yardstick

“UNTIL the TVA sustains the honesty of the charge-off for navigation and flood control there can be no such thing as a yardstick in the Tennessee valley. Up to the present it rests on the unsupported assertions of the three directors and of the employees of the TVA, who are of course interested parties.”

adding the \$51,000,000 going value of the property turned over to it by the government, as fixed by an audit conducted by U. S. Comptroller General McCarl, to the \$100,000,000 cash actually spent by the Authority during the tax period of 1935.

IN pursuance of the administration's determination to promote the public ownership of utilities the TVA sells primarily to municipalities which own their distribution plants. If the Federal government had not taken a hand many of these municipalities would be served by private companies which pay taxes. The private companies would have been obliged to pay out large sums in promotion as well as in physical construction. The Federal government has made outright grants of from 30 to 45 per cent of the cost of many of these municipal plants and made long term, low-interest loans for much of the balance.

Again the yardstick has had a piece cracked off.

These towns and cities do not pay taxes on the systems they own, which is another way of saying that millions of dollars worth of property has been taken off the tax rolls. The seven states of the TVA area and their component counties and cities have been so injured by this fact that a movement is gathering strength to compel the TVA to pay an “equivalent” tax on its investment. The TVA is resisting. This will undoubtedly be more formidable when the present flood of easy Federal money has been dammed. The privately owned utilities pay taxes, of course.

The TVA has boasted of the increased sale in electric appliances in its area. As a matter of fact such sales have been increasing for years before the TVA was born, but the promotion campaigns were necessarily costly. The privately owned companies spent what money they could wisely afford on them. The TVA has been able to charge promotional costs to the taxpayer, whether the taxpayer

PUBLIC UTILITIES FORTNIGHTLY

liked it or not. In Tupelo, Miss., one of the centers of TVA activity, in 1935, 504 refrigerators, 171 ranges, and 56 water heaters were sold. The TVA's annual report shows a commercial and new business expenditure of only \$1,875 for the period. That sum would not cover the wage cost of installation by one third.

ATENTION must be called to certain oddities of statement when TVA taxes are being discussed. President Roosevelt said on November 12, 1934, at Tupelo:

"We are proving in this TVA that by using good business methods we can instruct a good many business men in this country."

An outsider must conclude that the wrong kind of instruction is being given the business men, however. Director Lilienthal told the House Committee on Military Affairs that 12½ per cent of gross revenue is normally allotted to taxes by privately owned utilities. He has asserted frequently that TVA is playing absolutely fair in tax payments. Yet if the Authority had paid the 12½ per cent on gross which the utilities pay it would have contributed \$70,400 in 1935 on its gross sales of \$563,469. If this "good business method" is adopted by business men then the Federal budget will soon be more incredibly out of kilter than it is now.

If the yardstick idea is to be honestly applied then the TVA must account for the moneys put into its power plant by the government. The TEP Company has no option in these matters. It is compelled to use certain methods of accounting which as yet have been strangers to the TVA.

If the TVA is permitted to reduce its capital investment account in order to lessen the annual overhead chargeable against it then the yardstick is a cheat.

THE TVA bases its wholesale rates for electricity on an allocation of but \$19,500,000.

The audit value of the part of the plant chargeable to electricity is \$51,000,000, according to U. S. Comptroller-General McCarl. If \$100,000,000 cash expended is added then the total allocation should be \$151,000,000.

The government's total investment in the TVA, as planned at present, will be not less than \$400,000,000. No one knows what the ultimate total will be. If Congress continues to grant funds, for the program continues to expand, the difference between the \$19,500,000 which the TVA has accepted as a base on which to fix its wholesale rates and whatever the present total expended will be is charged off to navigation, flood control, and other purposes. The engineers of the U. S. Army have reported that the business of navigation on the Tennessee river is hardly worth bothering about, and that the average annual flood damage is much less than \$1,000,000, and that the greater part of this damage could be prevented at a comparatively trivial cost.

But if the cost of the electric plant is to be charged under other heads then the yardstick is smashed again.

Until the TVA sustains the honesty of the charge-off for navigation and flood control there can be no such thing as a yardstick in the Tennessee valley. Up to the present it rests on the unsupported assertions of the

A YARDSTICK THAT IS NOT AIR CONDITIONED

three directors and of the employees of the TVA, who are of course interested parties. The discrepancy is so marked that the suggestion has been made repeatedly that a board of unprejudiced and qualified experts be set up to determine the actual going value of that portion of the plant which is used for the production and sale of electricity. This suggestion has never been entertained by the directors.

U. S. Comptroller-General McCarl after his audit ruled that in accordance with the prevailing practice a 2 per cent charge for depreciation be made by the TVA on the established value of \$51,000,000. This would amount to \$1,020,000 annually.

The TVA refused to abide by standard practice and set up a depreciation reserve on the basis of 10 per cent of the gross earnings from the sale of power. There is at best but a faint relation between sales and depreciation. Sales bring money into the cash box. Depreciation is a creeping disease of the physical property. Up to June 30, 1934, the sum set aside as a depreciation reserve on the basis of 10 per cent of the gross sales was but \$82,618.

Not much left of the yardstick.

PPRIVATE industry is compelled to pay interest when it borrows money. If the utilities had not borrowed

there would today be no national wire network. The TVA pays no interest on the millions advanced by the government. The government pays interest—of course—because it must borrow the money before loaning it to the TVA. Unless both principal and out-of-pocket interest are repaid to the government then the general taxpayer is the loser.

Again the yardstick goes hay wire.

M^{R.} William M. Carpenter, economist of the Edison Electric Institute, will be quoted in support of the contention that unless the cost of procuring capital is included in the accounting no yardsticking is possible between the TVA and the privately owned utilities. Mr. Carpenter computes the accumulated interest charge on the investment applicable to electricity at Muscle Shoals as \$1,465,698, up to the end of June for the fiscal year 1935. His calculations do not include the Treasury costs in procuring the funds or the expense of the Comptroller-General's auditing service.

In 1935, he says, a total of 100,681,142 kilowatt hours were sold from Wilson dam. Divided into \$1,465,698 this gives 1.45 cents for every kilowatt hour sold and constitutes the bonus given by the taxpayers of the United States toward the furtherance of the TVA in that year. He



Q "THE TVA is not operating its plant at Muscle Shoals under conditions which even remotely approximate those under which the plants of its privately owned competitors of the Commonwealth and Southern company carry on. Therefore it is not a yardstick."

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argues that instead of the price of 0.58 cents per kilowatt hour sold by the TVA to municipalities and county power associations the actual cost was 0.58 cents plus 1.45, or 2.03 cents, and this without any consideration of depreciation.

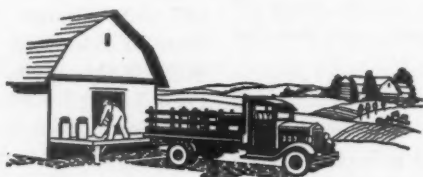
That kind of a yardstick might catch gudgeons but it is not a measure of comparative costs.

Other inches are missing from the collapsible yardstick the TVA favors. Private utility companies are compelled to pay mailing bills. The TVA franks its bills, statements, advertising, and letters. One of its very handsome advertising booklets, with the other things that go with it, has a mailing weight of about 36 ounces. The TVA laughs at the complaints of its privately owned rivals and suggests that it really hardly benefits at all by its franking privilege. Yet one of the larger utility companies found the mailing cost so burdensome that it sent bills to consumers in several cities by messenger until the government put an end to it.

THE TVA also is the beneficiary of reduced freight rates on materials used in the building of dams, power houses, and other facilities under the old land grant law. Even more important is its complete relief from the cost of insurance and damages, all of which is borne by the United States Treasury.

The constituent companies of the Commonwealth and Southern, in common with utility men everywhere else, have asserted that if they were given the chance to meet the government-owned power plants in honest, cheat-free, audited competition, they can undersell and overserve their rivals. But they have not been given that chance.

This article was planned as a discussion of the TVA's yardstick. But there is no such a thing. The scientists of the Bureau of Standards would go mad if they were asked to do their measuring by such a whimsical device. Only Mr. Lilienthal and the two Morgans are intellectually equal to that chore.



Utility Service on the Farm

TWENTY per cent of the farm homes are equipped with radios, 35 per cent with telephones.

FIGURES showing that the American farmers prefer flivvers to electrification were released last fall by the Federal Rural Electrification Administration.

SIXTY per cent of the American farmers own automobiles while only 15 per cent have homes equipped with electricity and the same percentage have water piped into their houses.



Latin America Looks at State Ownership of Utilities

Uruguay's experience, in the opinion of the author, represents that policy at its best

By SIMON G. HANSON

THE stimulus to state ownership in Latin America provided by the recurring attacks of administration utility-baiters in the United States has served to focus attention on Uruguay's experience with government-owned utilities. Although parliamentary debates and newspaper discussions usually mention the Uruguayan system as an argument in favor of state ownership, no adequate study of it has yet been made.

State socialism in Uruguay dates back to the turn of the century when the country embarked on a program to eliminate private and especially foreign enterprise. Her electric light and power organization (Usinas Electricas) has functioned under optimum conditions: the most stable political situation in South America, a population genuinely convinced of the advantages of state enterprise, favorable basic laws that granted independence

and freedom from excessive parliamentary pressure, and staffing with unusually capable men by successive administrations which sought to make it a showpiece and model for the larger commercial adventure to which the nation was being committed.

It should be borne in mind, therefore, that the Usinas Electricas represent state ownership at its best rather than an experience which may easily be duplicated elsewhere in Latin America. And even here the case for state ownership is not conclusive.

SINCE the original object of the state's entry into the business was to provide cheap electricity throughout the country (*buena luz y barata en todas partes aunque el estado no gane!*) and since present-day agitation elsewhere is largely against allegedly excessive rates that yield excessive profits, we shall consider rates first.

PUBLIC UTILITIES FORTNIGHTLY

A comparison with Argentina is feasible in view of the similarity in economic development and in problems of electricity distribution. Both Argentina and Uruguay have one large city using a great quantity of electricity, a steam plant, and fuel made cheap by location on the coast. The consumption of the interior towns is low, industrial usage confined largely to railway shops, use of domestic appliances limited by a standard of living lower than the North American, and by the effect of customs duties and unfavorable exchange in raising prices of appliances; consequently lighting is the main usage and the utilization factor is low.

There can be no doubt that consumers in Montevideo have benefited largely from state ownership. They have enjoyed the lowest rates in South America with the exception of large cities using hydroelectric power.

THE comparison with the privately owned plants of Buenos Aires is especially favorable to Montevideo in the rates on domestic appliances but the advantage carries also to rates on light and power.

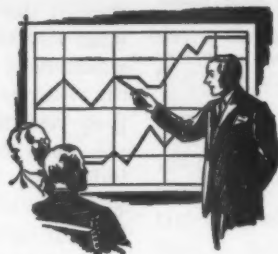
Converting into United States currency by using the free exchange rate for Argentina and the directed exchange rate for Uruguay as of December 27, 1935, and basing average monthly consumption on the Montevideo averages, the comparison is as follows: private lighting—Buenos Aires 7.7 cents per kilowatt hour, Montevideo 5.8 cents; domestic rate—Buenos Aires 7.2 cents, Montevideo 1.5 cents on domestic appliances generally and 1 cent on kitchen appliances; power (which individual nego-

tiations may cause great variations)—Buenos Aires 7.2 cents, Montevideo 1.8 cents.

Objection might be made to the inflexibility of Montevideo rates for the twelve centavos rate on private lighting has not been changed since 1912. Advances in the art, increase in sales, more efficient utilization of facilities, and a decrease in cost per kilowatt hour consumed from 3.91 cents in 1911-12 (the last year before the state took control) to 2.98 cents in 1929-30 might have been expected to call forth a lowering of rates. However, private lighting rates were not changed and the rate for public lighting actually was raised from 5.2 cents per kilowatt hour to 6.6 cents.

THE policy of the Usinas Electricas has been to stabilize the price of private lighting; thus rates were not raised during the war when costs of materials rose nor in other periods when the depreciation of the peso lifted costs. It must also be pointed out that the privately owned companies of Buenos Aires have not varied their rates from the concession rate clauses. Thus for Montevideo state ownership has meant a rate stabilized at a highly satisfactory level. But this is only in the capital whose political leanings were always toward the state socialist party and where the bureaucratic organization centers. The record is a different one in the interior where political opposition to the "Colorado" party has been strongest.

While the main objective of the state monopoly was to hasten the diffusion of electricity facilities in the interior towns, this object was not



Uruguayan Experience with Government Ownership

"THE advocate of state ownership may emphasize the exceedingly low rates in Montevideo, the fact that consumers in the interior have not paid more than private service would have cost, and the passing into government hands of a very valuable industrial property paid for out of profits. But he cannot fail to observe many undesirable features of the Uruguayan experience."

achieved. In 1927 when protests against the Usinas Electricas reached an unprecedented level, only twenty-six of the seventy-seven towns and cities were being served by the Usinas Electricas, eleven by privately owned plants, and forty were lacking in facilities. Of the twenty-six towns served by the Usinas Electricas six had previously enjoyed private service.

IN other words, in fifteen years the state had extended facilities to only twenty towns. And in one quarter of these towns power facilities were not yet available although it was the intention of the legislators that the Usinas should lead the way in making some industrial development possible. The state organization has chosen to wait until demand was sufficient to minimize the chances of loss. It is true that the small consumption and the necessarily large investments made

losses in many cases probable. Nevertheless the ultra-conservatism of the management balanced against the openly admitted issue on which the people accepted state ownership—cheap facilities everywhere and soon—lays the Usinas open to criticism.

In Montevideo the policy of charging new subscribers with the cost of bringing service to their doors for a long time made the cost of electricity almost prohibitive in many sections of the city.

A comparison of rates in interior towns is extremely difficult because the private plants operate on a different type of schedule from that of the Usinas.

Probably the most acceptable statement on the rate question is that offered by the management of the Usinas Electricas in 1927 in a pamphlet entitled "*La Gestion de las Usinas Electricas del Estado.*"

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We do not claim that the private companies charge more than the state plants. We can only assert that the Usinas Electricas do not charge more than the private plants and that in eight cases we charge less than the cheapest private service in existence.

THE Uruguayan consumer and the restless consumers of other Latin American countries can hardly enthuse at the argument that the state does not charge more than private plants. Some more definite benefit is being sought from state ownership. Nor does a comparison with Argentina afford any prospect of general advantage to be derived from change in ownership. Using the basis of calculation mentioned above, the following are the rates in a few representative towns. Private lighting in Argentina: Jujuy 6.8 cents, Campana 7.6 cents, Zarate 8.9 cents, Bolivar 10.8 cents; in Uruguay, Salto 5.7 cents, Paysandu 7.1 cents, Minas 8.5 cents, Mercedes 9.4 cents. Power rates for the same cities in Argentina are: 4.9 cents, 4.9 cents, 5.4 cents, 5.4 cents; in Uruguay, 4.1 cents, 3.6 cents, 2.4 cents, 4.1 cents.

In adopting private industry's measuring rod of success—commercial profits—the state administration assumed that it would be able to resist political pressure which is inevitable when such a lucrative target becomes available.

THE financial record of the Usinas has been good. In its first twenty years (data have not yet been published for the years since 1931–32) the Montevideo plant earned gross profits of \$34,200,000 and the interior plants yielded a loss of \$1,641,000. Adequate allowance was made for depreciation and obsolescence.

The contribution to general revenues of the state was probably somewhat less than a private corporation would have paid in taxes, in view of the rising burden of taxation in Uruguay and the unfriendly attitude of the government toward foreign capital. Nevertheless the net profit of \$14,987,000 which was plowed back into capital attests to a commendable efficiency of operations; it is a large yield compared with investment and compared with the usual yield on public utility investments in Uruguay.

But the important questions are these: Can other Latin American countries operate an electricity service as efficiently as this one? And if so, if they accumulate profits by holding rates up to the level that private corporations might charge, is it reasonable to expect that these profits will be as carefully utilized as they were in Uruguay in predepression days. The changes in Uruguayan policy since the depression makes this seem doubtful. The existence of large earnings had early caused a demand for profit sharing which resulted in the distribution from 1924 to 1931–32 of \$2,216,000 among employees.

WHEN the financial difficulties of depression years became pressing the government began to interfere with the Usinas and the interference grew after the *coup d'etat* of 1933; the annual contribution to the state was raised from \$200,000 to 50 per cent of the profits and then to 80 per cent.

Financial and political strain is more characteristic of other Latin American countries than of Uruguay but even here when the difficulties ap-

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peared there was a strong temptation to milk the state enterprises. This in turn had the disastrous effect of removing the incentive to conservative management.

During the depression expansion in the interior has been speeded up. The Usinas Electricas entered the mining field to exploit commercially unavailable resources with the idea of bartering minerals for imported fuels, and support has been accorded the enormous hydroelectric project on the Rio Negro which would involve the investment of over \$40,000,000 and provide facilities far exceeding present-day needs of Uruguay.

It would be well for legislators and newspaper critics to investigate the Uruguayan plan beyond the superficial observation of Montevideo rates which has hitherto sufficed to win general approval for that system.

THE advocate of state ownership may emphasize the exceedingly low rates in Montevideo, the fact that

consumers in the interior have not paid more than private service would have cost, and the passing into government hands of a very valuable industrial property paid for out of profits. But he cannot fail to observe many undesirable features of the Uruguayan experience.

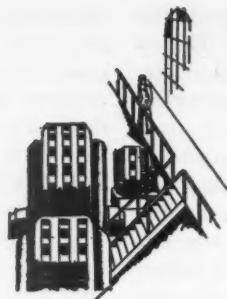
The Usinas Electricas failed to meet the original purposes for which they were created. Service in the interior has not been materially cheapened. There has been a tendency to maximize profits rather than to improve service and lower rates; and this is exactly the point in the conduct of private corporations which is being criticized.

It has not been possible to disassociate completely the treatment given different sections of the country with the political tendencies of these sections. And the extreme difficulty of protecting commercial profits from legislative interference and from the eager hands of politically important groups has been a constant menace.



Revenue Loss from Electric Cord Failure

BETWEEN forty and fifty per cent of the service calls made by electric companies for domestic customers are caused by cord failures on household appliances, according to the *Electrical World*. These service calls cost the average electric company anywhere from one to three dollars each and multiplied by the number of calls made daily throughout the country run into a very large sum of money in the course of the year. But this is only a part of the loss to the utilities. Many appliances that get out of order are set back in a corner out of use and that means that that particular appliance no longer returns revenue to the utility. Cord failure, therefore, takes a heavy toll in loss of service to the householder and income to the industry. Periodical cord inspection, therefore, might well yield profitable results.



The Municipal Utilities and Their Mission

Their existence, in the opinion of the author, is fully justified, and their conception, operation, and management grossly misunderstood.

By R. E. McDONNELL

INASMUCH as a major portion of the space in our trade magazines is devoted to the activities and accomplishments of the privately owned utilities, it is not unlikely that many readers fail to realize or appreciate the worth-while service that has been and is being rendered by our municipal utilities—particularly those dealing with water, gas, and electricity—throughout our nation. The extent and character of this service can be very effectively illustrated with respect to the new interest now centered in the electric utility business and the consumption of electricity in the home.

The water utility business has been almost wholly a municipal enterprise. The perfection of water treatment methods and the improvement of the reliability of water service must be credited to those individuals charged with the management of the municipal

water systems. To a lesser extent, municipal properties have participated in the development of the gas business. Now, with the electric utility business assuming what appears to be a broader importance in the matter of service to mankind, perhaps it is timely to measure, in a way, the part that the municipal utility is playing in this field.

The general public at this time is particularly electric-household-appliance minded. This fact can be very readily verified in this way: Inquire of your friends, your friends' wives, what their next substantial purchase will be. A large proportion of the answers will include electricity-consuming devices. A great many people have come to appreciate the increase in personal comfort to be derived from the use of more electricity in the home.

The electric utilities are making

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every effort to convert this interest into plant load and operating revenue. To some extent the municipal properties lack the profit motive that is inherent in private operation, but they have come to realize (particularly in the recent years of economic distress) that it is their duty to make more of the advantages of electricity available to more of their customers. They have caught the spirit of "the more abundant life."

THE present widespread interest in electrical appliances for the home must be credited to a very great extent to the Tennessee Valley Authority. By encouraging the manufacture and distribution of lower cost appliances, and by introducing a domestic all-purpose rate which is so low that general consternation followed its announcement, the Tennessee Valley Authority has, within the short period of its existence, aroused a degree of interest that could hardly have been accomplished, even with intensive advertising, by any group of private interests.

This is not to say that this interest is entirely new. Perhaps it is more correct to say that our perspectives and our horizons have undergone a major adjustment, and that we have come to measure the potentialities in broader terms. Some ten years ago the goal for the domestic consumer, in most sections of the country, was 700 to 800 kilowatt hours per year; now the industry has increased this goal three and fourfold. The electrical home has assumed a broader significance.

Most of us recall in a general way the history of the introduction and

adoption of electrical domestic appliances. Prior to 1918 the use of electricity in the home was confined almost wholly to lighting and small appliances. Electric ranges came along about 1920; the electric refrigerator in 1925 and 1926. Refrigerators offered less sales resistance than the range, and moved more quickly into the load-building scheme. The radio began to contribute its bit in 1927 and 1928.

SEARCHING for records of pioneering in these fields we find that the municipal property at Seattle was one of the first to promote electric cooking. In 1912—remembering that ranges became a major influence on consumption about 1920—the Seattle municipal utility bought 60 electric ranges and sold them to a corresponding number of customers, absorbing the cost of installation. Some of these ranges are still in use. The record of the Seattle municipal property since that time is pictured in these figures:

Date	Domestic Consumers	Ranges	Saturation
Jan. 1, 1920	56,845	954	1.7%
Jan. 1, 1925	73,537	4,850	6.6%
Jan. 1, 1930	82,839	21,389	25.8%
Jan. 1, 1935	79,624	26,541	33.3%

One range for every three domestic customers, an enviable record in light of the national average of one range for every thirteen customers.

Part of Seattle is served by a private utility which claims 16,000 connected ranges. With 28,000 on the city lines at the first of this year the combined total is 44,000 ranges for 375,000 inhabitants. This western city seems to have a rightful claim to greatest saturation of ranges. Certainly they have the largest number of

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any city in this country, irrespective of population.

However, participation in the advantages of the electric home by the consumers requires more than foresight and sales effort on the part of the utility management. Costs must be commensurate with the service rendered, competition of other fuels must be met, and rates must be proportioned to encourage the use of appliances. Lacking some of the tools of merchandising available to the private utilities the municipal properties have, in many cases, made the reasonableness of their rates their best advertisement for appliance sales and their best aid in load building.

IN a recent survey of electric range usage the rates applying to some 13 million domestic customers in this country were analyzed with respect to their cooking costs, using as a basis for comparison the cost of 125 kilowatt hours per month after allowing for other household usage. The range of this cost was found to be as follows:

Less than 1½¢ per kw. hr.—	2% of the customers
Less than 2¢ per kw. hr.—	26% of the customers
Less than 2½¢ per kw. hr.—	63% of the customers
Less than 3¢ per kw. hr.—	92% of the customers

Excluding Canadian properties,

there were five municipal properties included in the survey. These cities and their cooking rates were as follows:

	<i>Per kw. hr.</i>
Los Angeles, California	2.1¢
Jacksonville, Florida	2.0¢
Seattle, Washington	2.0¢
Kansas City, Kansas	1.5¢
Tacoma, Washington	1.0¢

As will be noted, the level of these rates was much below that of the average for the country. In fact, the rates for these municipal plants and for the Canadian municipal properties were among the very lowest quoted in the survey. The cost of cooking under TVA rates, on a comparable basis, is 1.8 cents per kilowatt hour.

The larger properties naturally give more intelligent attention to rate matters. This is particularly true of the municipal properties. But, as the occasion demands, the smaller properties eventually follow the lead of the larger units. Rates for electric cooking should not exceed 2.5 cents per kilowatt hour. Apparently 65 per cent of the customers in the country have cooking rates which meet this requirement.

Electric refrigeration has been given slightly more recognition. Roughly, 85 per cent or more of the customers of the country have rates which offer no detriment to this source of load and revenue.



Q "PRIOR to 1918 the use of electricity in the home was confined almost wholly to lighting and small appliances. Electric ranges came along about 1920; the electric refrigerator in 1925 and 1926. Refrigerators offered less sales resistance than the range, and moved more quickly into the load-building scheme. The radio began to contribute its bit in 1927 and 1928."

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Now the electric water heater looms as the next real domestic load builder. In general, without going into the details of gas competition, hot water heating requires a 1 cent per kilowatt hour rate. Apparently only 25 per cent or 30 per cent of our domestic consumers have favorable rates for this load. A recent survey, covering 8 million domestic consumers, revealed a hot water heater saturation of $\frac{3}{4}$ of 1 per cent—between seven and eight heaters for every one thousand domestic consumers. The four municipal properties included in the survey were, as follows:

Los Angeles, California	5%
Lansing, Michigan	2.2%
Seattle, Washington	20.0%
Tacoma, Washington	21.1%

As the average would indicate, the saturation of few reporting companies exceeded 5 per cent. While the Canadian state and municipal electric utilities enjoy an advantage, due to the high price of other fuels in their territory, they have demonstrated that many more water heaters can be placed in the homes if the cost, with relation to other fuels, is reasonable. The municipal property at Winnipeg has nearly a 50 per cent saturation of electric hot water heaters.

Much has been said and written about the electric utility in Canada and particularly about the state-owned Ontario "Hydro" system. In any event, their record is impressive and offers interesting comparisons with our own results. Last year the average domestic consumption of electricity in this country was 666 kilowatt hours per domestic customer; the "Hydro" system sells $2\frac{1}{2}$ times this quantity. Their average is about 1,650 kilowatt

hours per customer. While, as mentioned above, the Canadian system has an advantage over most sections of this country, due to the high price of other fuels, their results do indicate that the domestic customer is eager to make use of much more electrical energy than he is now using.

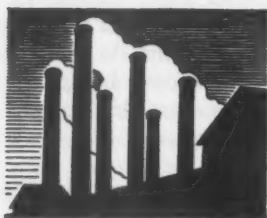
WITH this wide disparity in domestic consumption between the "Hydro" and the United States it is somewhat surprising to note that one or two load sources have had greater development here than in Canada. The subdivision of the average sales per customer illustrates this point as follows:

	"Hydro" kw. hr.	United States kw. hr.
Water heaters	270	30
Ranges	645	85
Refrigerators	65	145
Radios	35	45
Other major appliances ..	235	95
Lighting	400	266
Total	1,650	666

That it is not impossible for us to approach or equal the Canadian results is being proved at Tupelo, Mississippi. This southern city of moderate means is using about 1,300 kilowatt hours per year under the newly initiated TVA rates. If we will look at this result without bias, we will have to admit that a real social service has been rendered to the residents of Tupelo. Under the TVA rates they have been using two and one-half times as much energy as they formerly did, and the total cost is still only about 80 per cent of former total costs.

The relation of the Tupelo consumption to the average for the country is determinable from the curve il-

What Produced Municipal Plants



"THE struggle to establish municipally owned plants has been largely one of self-defense on the part of the municipalities. The desire to secure reasonable rates and procure for the city financial relief has been the incentive almost universally that has led to the establishment of municipally owned plants. The rate regulation efforts were fruitless."

illustrating this article. This curve covers about 75 per cent of the domestic customers in the United States. As may be noted, 90 per cent of these customers use less than 800 kilowatt hours per year. And from a study of the basic information from which the curve was prepared it appears that most of the customers in the upper range of consumption are in the northwest and southeast, the lower rate centers of the country (as evidenced by the rate map recently published by the Federal Trade Commission). In other parts of the country, except in the case of very prosperous residential suburbs, very few communities exceed an average of 800 kilowatt hours per domestic consumer.

THE writer knows intimately of the accomplishments of several municipal properties in the midwestern territory. The records of at least two of them—Rochester, Minnesota, and Springfield, Illinois—will serve to illustrate the part that these utilities are playing in the promotion of home usage of electricity.

Rochester, the home of the Mayo Clinic, is somewhat above the average in general prosperity. The

Springfield property competes with a private utility. Both properties have enviable records of service to their customers. The extent to which the customers have taken advantage of their favorable rates and promotional activities is evidenced by these appliance saturations and average kilowatt-hour sales per domestic customer:

	Rochester	Springfield
Hot water heaters	1%	3%
Ranges	22%	16%
Refrigerators	58%	31%
Average consumption per domestic customer	1,075 kw. hr.	922 kw. hr.

The Springfield property is giving further evidence of real pioneering foresight and initiative. Two homes in this city have passed through two trial seasons of electrical heating and have demonstrated that properly insulated 5- to 8-room houses can be heated on off-peak rates for \$100 to \$125 per season. Other homes are being constructed to make use of this new service.

Certainly, opportunity for service is not being neglected here. The two properties that have been used for illustration are among the leaders in the promotion of customer usage, but others could be found that can equal

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or better these records. Seattle and Tacoma, with sales of 1,100 and 1,200 kilowatt hours per customer, are outstanding examples of the accomplishment of the municipal properties. They are mentioned in every article on the subject.

THE municipal lighting utility is not new. There are 1,923 of them in successful operation in the United States. However, one would think, from the existing agitation, that municipal ownership was a new and untried venture, and largely a theory.

The recent agitation regarding publicly owned plants has been increased and brought to the forefront through governmental activities giving their support and aid to the establishment of municipal plants. However, it is firmly believed that the cause of public ownership has not been enhanced or helped by the Federal activities, for it has merely opened the way to court injunctions and delays that never before existed in the establishment of municipal plants.

The struggle to establish municipally owned plants has been largely one of self-defense on the part of the municipalities. The desire to secure reasonable rates and procure for the city financial relief has been the incentive almost universally that has led to the establishment of municipally owned plants. The rate regulation efforts were fruitless. It involved the city in a long, expensive litigation; and, as a last resort toward procuring better service and reduced rates, many of the municipal plants were established. There are now in existence about 100 plants that are still competing with privately owned installations,

and I doubt if a single one of these cities would ever have undertaken the building of a competing plant except as a last resort—having been forced into this position through the refusal of the company to make any sort of concessions or offers to sell their property after the people had overwhelmingly expressed through the ballot a desire to own and operate the utility.

THERE are many fallacies, misconceptions, and much lack of knowledge relative to the operation and management of municipal plants. The spreading of this misinformation has been largely the work of the paid utility propagandists, often fostered and financed by the holding companies. A review of some of these fallacies credited to the municipal plants and their management and operation may be of interest:

Anyone having the temerity to speak out in defense of city light and power plant management and operation is charged as being a "socialist," "communist," "red," and "wild-haired," generally. As a matter of fact, these same municipal officials or citizens probably know nothing whatever of the theory, practice, or principles of socialism, communism, etc. The municipal movements have no connection or affiliation with such groups.

If public ownership could be charged with being socialistic, then, as it is applied to municipal waterworks installations, it would show that 73 per cent of our American cities are socialist minded, and that almost all of our large American cities are dominated by socialism. The municipal operators, managers, and superin-

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tendents are universally looking to good load factors, high efficiencies, fuel economies, and lower generating costs. One would think they were a lot of incompetent political appointees if he listened to the propaganda spread over the country. The tenor of office of these managers, operators, and superintendents is as long as the managers of the private installations, if not longer. The long years of service and the established records of superintendents and managers of municipal plants in such cities as Los Angeles, Kansas City (Kansas), Seattle, Lansing, Colorado Springs, and Tacoma, as well as many other cities, explode this fallacy. In our municipal water plants we have many managers who have served for twenty-five, thirty, and even up to fifty years in these departments, and yet the partisan advocates of the utilities would have you believe these positions are all changed with every election.

THERE is no monopoly on the brains or ability serving either the private or the municipal plant. There is that same high-class service and loyalty existing in both the municipal and the private installations. The real battle and fight between public ownership and private ownership is not among the managers, operators, and engineers who have a wholesome respect for each other, but it is large-

ly the work of the professional propagandist, aided, abetted, and often financed by holding companies, financial groups, and speculators who are manipulating securities. It is like many of our wars which would not have existed except for the activity and agitation of the munition makers. The army of operators, managers, and superintendents are not anxious or desirous of fighting each other, but are forced into this position by those in control of the holding companies. Competitive light and power operation is just as distasteful and undesirable from a municipal standpoint as it is from the private standpoint. No city willingly goes into competitive operation. It is a condition forced upon them by the arrogance of the companies and their refusal to give to the electric users their fair share or benefit of reductions in the art of producing and distributing electricity.

THE press of the country has been so fully subsidized through paid advertising from the large privately owned companies that it is a rare thing to see any complimentary comment on the splendid operation, efficiency, and management of the municipal plants. The old saying is still true, "Where an editor's treasure is, there will his editorial policy be also." It is almost an unheard-of thing for a newspaper nowadays to give sup-



Q "Now the electric water heater looms as the next real domestic load builder. In general, without going into the details of gas competition, hot water heating requires a one cent per kilowatt hour rate. Apparently only 25 per cent or 30 per cent of our domestic consumers have favorable rates for this load."

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port to public ownership; and the bond issues that are being carried for these public projects are carried in spite of the opposition, and without the aid of the local press.

We see organized at all these elections so-called "Citizens' Taxpayers' League," "Citizens' Protective League," etc., which are merely groups performing under the high-sounding names at the instigation of the utilities. These groups, financed by the utility companies, have attempted to convey the impression that they are really outstanding citizens interested in the welfare of the community. Even their exposure and admission as to their being financed by the utility companies have not lessened their activities. The sales managers and equipment salesmen of Diesel engines, generators, boilers, condensers, and other electrical equipment are just as keen and desirous of selling their equipment to the municipal plants as to the private plants. These men often express humiliation and embarrassment that their holding company and management attempt to discredit public ownership, while they, on the other hand, are endeavoring to sell to the hundreds of municipal plants their very best equipment and service.

IF it were not so tragic it would be laughable to see how private utility companies flock to the legislature (both state and national) to prevent the municipalities having the very same privileges that the private companies already enjoy. For example: They will bond their private utilities and issue securities to the breaking point, and yet, at the same time, will spend millions of dollars in trying to

influence legislation to prevent a municipality issuing any revenue bonds against the utility, itself. It is all right for the private utility, but all wrong for the municipal utility.

Notwithstanding this opposition, 28 states now have laws permitting the issuance of revenue bonds so that utilities may be extended, improved, and built out of the revenues only, and without any general obligations against the city.

The private power interests have shrewdly placed in nearly every city in the United States their executives throughout the service clubs and chambers of commerce, thus automatically controlling and killing open forum discussions of the merits of either private or public ownership. In my thirty-nine years of engineering service, rendered to over 750 municipalities, I have encountered but one city where the chamber of commerce was free, unhampered, and enthusiastic for public ownership. I doubt if you could find a chamber of commerce in America that does not have on its directorate a number of private utility executives whose purpose is to dominate and control the utility policy.

WHEN it comes to rates the municipal plants have been the pace-setters in reducing rates; and, as generation and distribution costs and fixed charges are reduced, the municipal plant customers have been given the benefit of this reduction.

The rate reductions of municipal plants are invariably free and voluntary, while the rate reductions of private plants are often resisted for years in the courts and before com-

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missions. Our New York commission has one case that has been pending for over twenty years, and is still unsettled.

Municipalities have learned that the quickest way for a rate reduction is to establish proceedings toward a municipal plant. Reductions in rates that were heretofore declared impossible and would, as the companies claimed, lead them to bankruptcy, have been given—in some cases three, four, and even five reductions—in an effort to head off a municipal plant. Then, as surprising as it may seem, after the municipal plant has been established, the company meeting the reduced rates is, in many cases, enjoying better revenues under these reduced rates than formerly. Both municipalities and companies seem to have been slow to learn that increased production and revenues are procured through having electricity and appliances at a sufficiently low cost that they can be used and enjoyed.

The outstanding difference and the resulting advantage to the municipal plants are the retirement of their bond issues and the reduction of their fixed charges, which give the municipal

plant a constantly lower and lower rate.

THE municipal plants are far from perfect. They have seen their mistakes and are correcting them. Their battle has been largely one of self-defense; but, universally, they have been advocated, established, and maintained by high-minded, well-meaning citizens who have considered the question from a purely business standpoint.

The record of the municipal plants, themselves, is the best propaganda that the municipalities can offer as to the success of public ownership. Their existence is believed to be fully justified, and their conception, operation, and management grossly misunderstood.

With outstanding records of hundreds of municipal plants at the present, the refreshing thing about it all is that the municipal properties have a keen appreciation of their responsibility to mankind. They realize that it is their mission to bring a full measure of comfort to the home at reasonable cost. And they are bending to the oars with this their goal.

Maybe the Power Trust Is Back of It All

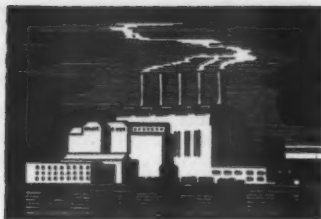
Too much enlightenment after school hours and a charwomen's feud are irking some of the citizens of Parma, Ohio, who have to pay school taxes. It all came about when one citizen noticed that the State Road School in Parma was lit up like a Christmas tree from cellar to roof every night. Becoming annoyed at the thought of a rapidly ticking electric meter, he complained to a member of the school board who in turn asked Custodian George Weiss "how come."

"It's this way," Weiss told the board. "The ordinary way of cleaning a school building is to have all the women work in one, or perhaps two, rooms at the same time.

"But in my building the cleaning women are all mad at each other. I don't dare have more than one woman in a room at a time. That's why there are so many lights on at once."

Weiss said he had done everything he could think of to bring peace.

The board, while sympathizing with the taxpayer, was unable to help Custodian Weiss.



Do Municipal Electric Plants Really Pay?

An Important Question for Taxpayers

THE following article is prompted by the fact that the Federal government has aided, if not encouraged, a large number of small communities to enter into competition with various electric companies in a highly technical business, and the author questions whether the business of the various communities is sufficient properly to support the proposed enterprise, retire the indebtedness, and keep the plant in condition to render adequate service when publishing rates as low or lower than those of the private plants.

By HENRY EARLE RIGGS

IN view of the support and backing that the Federal government has been giving to the promoters of municipal electric light and power plants in dozens of communities throughout the United States during the past two years, and of the obvious disinclination of officials of the present Federal administration to give serious consideration to argument or proof that many such plants are doomed to almost certain failure, it appears to be a proper time to discuss the whole question of municipal ownership of electric utilities and review the available facts developed by those plants now in existence.

It may be argued that this phase of governmental activity in matters electric is too small to merit much discussion. As of October, 1935, the latest available figures, the Power

Program of the United States Government was as shown in Table 1, page 364.

In addition to these projects estimates for rural electrification and various rate, power, and river utilization surveys, and for committees dealing with the subject add another \$102,425,000. Furthermore, the Grand Coulee project is included in the above figures at \$60,000,000, but this only covers preliminary construction work and the estimates of completed cost are said to exceed \$300,000,000 for the power project and vastly more for the completed irrigation project.

FROM these figures it appears that the government is committed to a power program which will ultimately cost from one billion and a quarter to one billion, four hundred million dol-

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TABLE 1

	Total Estimated Cost	Appropriations, Loans, and Gifts
Nine Federal projects (including Boulder dam)	\$876,302,000	\$403,860,000
State and district projects (8 states)	116,600,754	54,658,754
Municipal projects	36,000,000	27,316,297
Total construction projects	\$1,028,902,754	\$485,835,051



lars, of which some five hundred million dollars have already been earmarked, leaving for future appropriation or allocation something like eight hundred million dollars.

In the light of these impressive figures thirty-six million dollars is "mere cigarette money," less than 3 per cent of the total.

But the "municipal project," the new electric light plant for the old home town, is something that is very close to the pocketbooks of the consumers of electric energy and the taxpayers. If the plant is a success, if it can give good service at rates no higher than those of the large power company, with adequate allowances for necessary upkeep and replacements, no one has cause for complaint. If it is not a success, if the burden of paying fixed charges and bond retirement cannot be paid out of revenues, then the taxpayers must make good. If replacements are not made and the plant is allowed to get into such condition that service is poor or irregular, or if rates are excessive, and the burden of paying for current for street lighting

and water pumping is put on the consumer, then the cause for complaint is his.

THIS being true the citizens of every community have a right to be fully and honestly advised as to all phases of the question before undertaking any such adventure.

The \$27,316,297 allocated to municipal projects is analyzed in table below:

It would appear, as a general proposition, that where a city is already served by a municipal plant, and extensions or expenditures for modernization appear to be necessary to the city officials in charge, that little if any ground would exist for challenging the propriety of granting Federal funds for the purpose under existing conditions.

A new competitive plant in a community already served is quite another matter. Putting aside entirely all arguments usually advanced by the existing company, such as—that a large investment is destroyed, such as—that any unfair rates or practices can be



	Loan	Grant
For new competitive plants in cities now served by commercial (privately owned) power companies	\$11,997,516	\$7,444,031
For extensions to or improvements of existing non-competitive municipal-owned power properties	4,479,500	3,395,250
Total loans and grants	\$16,477,016	\$10,839,281

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adjusted by existing commissions, or that employees resident in the town will be thrown out of work, and looking at the subject solely from the interest of the taxpayer and power user, these questions may properly be asked:

Is the business of this community sufficient properly to support the purposed enterprise, retire the indebtedness, and keep the plant in condition to render adequate service when publishing rates as low or lower than those of the private plants?

What has been the experience of other communities, of comparable size and similar characteristics, which have gone into the light and power business?

The answer to such questions is not usually to be found in the reports of men who are most active in promoting the building of such plants. Equip-

ment firms desirous of selling their wares, and engineers who want work too often refrain from giving adverse reports when there is a border line case.

An examination of the detailed information as to Federal loans and grants for competitive electric plants given on the most recent map issued by PUBLIC UTILITIES FORTNIGHTLY shows that, excluding projects where water is involved, and classifying by population groups, the projects shown below in Table 2, have been approved.

THUS it appears that of the \$18,040,947 loans and grants listed in the eight groups 73.03 per cent is assigned to small cities and villages. It is in the larger cities capable of building plants of ample capacity to furnish not only residential and commercial energy, but industrial power in large quantities that there is the



TABLE 2

Group		No. of Cities	Loan	Grant
I	Cities with population in excess of 100,000	1	\$1,950,000	\$650,000
II	Cities with population between 50,000 and 100,000	2	80,500	231,500
III	Cities with population between 25,000 and 50,000	3	55,500	235,500
IV	Cities with population between 15,000 and 25,000	5	831,000	830,727
	Total loans and grants in cities over 15,000	11	\$2,917,000	\$1,947,727
V	Communities with population between 7,000 and 15,000	19	\$5,068,846	\$2,897,031
VI	Communities with population between 4,000 and 7,000	11	1,611,000	787,408
VII	Communities with population between 2,000 and 4,000	17	622,300	923,470
VIII	Communities with population less than 2,000	20	663,370	602,795
	Total loans and grants, communities of less than 15,000	67	\$7,965,516	\$5,210,704
	Grand Total, 8 groups of communities	78	\$10,882,516	\$7,158,431

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greatest likelihood of success for such a plant.

Whether this governmental generosity is a good thing for these small communities or not will only be known with absolute certainty fifteen or twenty years hence. I am very definitely of the opinion that in the majority of these cases this apparent generosity will turn out to be a curse instead of a blessing and that the net result will be to add to the already large list of little towns which own obsolete, illy maintained, inadequate, and unprofitable plants which give most unreliable and unsatisfactory service, many of them at high rates, and none of them with enough earnings to better their condition, or with sufficient capacity to develop the industrial power which would attract industry and build up the community. Before I state the reasons for the faith that is in me and undertake to prove my thesis there are three things that need to be said to make my background and position on this question perfectly clear.

FIRST. I fully recognize the fact that there are some very excellent municipal electric plants, possibly as many as fifty of them, which have well-designed, well-built and reasonably modern plants of adequate capacity, and which are operated by highly skilled and competent managers, operating under nonpolitical boards with a good degree of continuity of service and policy. There is another and possibly larger group, with perhaps as many as a hundred plants, which can be classed as good, as to plant, management, and policy.

A number of the plants in the two

classifications just referred to publish rates that are as low or lower than those of the commercial companies in the territory. All of these plants show adequate earnings, make proper provision for upkeep and replacement, give good service and are fairly and properly a matter of pride to the officials and citizens of the community.

There is a third considerable group of which one might say that they justify their existence and in the absence of any other means of getting electric service can be classed as satisfactory.

IT must always be remembered that there are some 1,825 municipal plants in the United States, and that the three groups just referred to probably do not include over 15 per cent to 20 per cent of the total. Unless someone can prove the contrary I shall continue to class the rest of them as sorry mistakes.

Nearly all of the plants in the three groups considered excellent, good, or justifiable will be found to be twenty-five to forty-five or more years old. They were built in the early days of the industry when it was a choice between a municipal plant and giving a franchise to a group of promoters to build an isolated private plant in the community. They have retired all or nearly all of their indebtedness during a period of high or relatively high rates, and they are not competitive. What I have to say of a critical nature does not refer to these plants, and is not to be construed as opposition to public ownership *per se*, because I am not an opponent of wisely planned and well-administered public service utilities of any kind.

Misleading Municipal Plant Propaganda

" . . . to assure the citizens that municipal plants give lower rates than commercial plants, to give out statistics as to average rates in effect in the country as a whole, or for groups of plants of mixed size in which most of the energy is sold by large hydro plants, and apply those average figures to towns of a few hundred or a few thousand people, is little short of a crime."



SECOND. Somewhat more than a year ago in an article in PUBLIC UTILITIES FORTNIGHTLY I saw fit to comment on a certain publication and was roundly called down in private as an agent of the "power interests" and a paid opponent of the public interest. It may not be amiss to say that neither that nor this article has been suggested or financed by anyone but myself. Raised and brought up as an old line Democrat in a state that was strongly Republican, I learned early of "Wall Street," the "trusts," the "interests," and a lot of other hobgoblins used by politicians. After ten years of railroad construction I engaged in private engineering practice in the design and construction of electric railroads, waterworks, sewerage, and other municipal work, and for sixteen years was working, principally for the public, in sixty to eighty communities large and small in Ohio, Michigan, and Indiana. I believe that I know fairly well the strong points and weak points in our city and village administration in towns of from 100,000 population down to small villages. At the end of that sixteen years I became a teacher, and limited my private practice to valuation and public utility problems,

again doing much of my work for cities and state commissions.

My conclusions have been reached after nearly fifty years' experience of engineering work with a substantial background of mistakes made by my friends and myself in our youthful enthusiasm. I believe that I understand fully the problems of our small towns and the reasons why so many of them are led into unwise enterprises.

THIRD. I must again reiterate what I said in a former article. The weak point of public ownership, and that applies to Federal, state, and municipal projects equally, is that after voting the money the public in many—probably most—cases gets no further information.

Wrongheaded ideas of "home rule" cause most of the states to refuse to require publicly owned agencies of any kind to submit to regulation of the railroad or public utility commissions, particularly as to accounting and uniformity and publicity of statistics.

The Interstate Commerce Commission got nowhere until it was given control of accounting and was in a position to know exact facts. The same is largely true of the state com-

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missions in respect of the utilities. Regulation of accounting brought uniformity of accounting and the adoption of sound and right principles and resulted in wholesome and helpful publicity.

UNTIL municipally owned utilities are compelled to adopt the same accounting rules, and are subjected to the same publicity that the privately owned ones use, we will never know the truth about most of them. The good ones have nothing to conceal and most of these keep proper records and give good local publicity.

If the citizens of a town were given the opportunity to compare the statistics of their own plant, kept under commission supervision, with those of other and better plants, there would be many a revolution.

If the state commissions can act in the interest of the public in matters affecting privately owned properties, and they most certainly have done so, they can equally cure many faults in the administration of publicly owned properties.

I believe in state regulation, and am convinced by long experience that better results can be obtained by state regulation of these local utilities than could possibly be secured from any form of Federal bureaucratic control from Washington. Supervised accounting and uniform statistics will furnish a basis of comparison of our home-town plant with others that is wholly in the public interest.

THIS article is prompted by the fact that the Federal government has aided, if not encouraged, these sixty-seven small communities to enter into competition with various electric com-

panies in a highly technical business. If that business is to succeed skilled and experienced management is essential, and in these small towns such management is not likely to be secured.

To build an isolated competitive plant, to borrow all or substantially all of the money under conditions imposed by the government, to load the property with heavy fixed charges, in addition to normal operating expenses is only justifiable under extreme conditions of poor service or high rates, and only if sufficient rates can be charged to insure enough revenue to make the plant fully self-supporting.

But to assure the citizens that municipal plants give lower rates than commercial plants, to give out statistics as to average rates in effect in the country as a whole, or for groups of plants of mixed size in which most of the energy is sold by large hydro plants, and to apply those average figures to towns of a few hundred or a few thousand people, is little short of a crime.

DOES the Federal government have reliable data as to the statistics of operation of the more than eighteen hundred municipal plants in the country? Have the Federal agencies that approved the expenditure of more than thirteen million dollars in the 67 small communities now building or contemplating competitive plants made a careful and critical analysis of the estimates of cost and estimates of revenue and expenses that were submitted with the application? Have these estimated figures been compared with the actual performance of competitive municipal plants in towns of the same

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size? Or even of noncompetitive ones? The writer's quite limited experience with these cases leads him to think that the answer to all of these questions is "No."

In a few of the states, notably New York, Wisconsin, and Massachusetts the facts are of record with the commissions. The Federal Power Commission in the short time it has been functioning has not yet had time to analyze and publish statistics of operating expenses. It has, however, studied rates and has published typical monthly bills for some seven assumed amounts of residential energy.

FOR some years the engineering firm of Burns & McDonnell of Kansas City has been publishing a booklet entitled "Results of Municipal Lighting Plants." The second edition in 1933 gave data relative to 222 plants, the third edition in 1934 covered 365 plants, and the fourth in 1935 covered 415 plants.

The information requested from local plant officials obviously included age of plant, type, capacity, and maximum demand; cost or value and amount of indebtedness; number of customers, revenue, and kilowatt hours of residential, commercial, power, total sales to customers, street lighting, water pumping, and other municipal use; and operating expenses. Evidently there was no at-

tempt to secure an analysis of operating expense to show cost of production, distribution, utilization, or general expense, or to indicate payments for taxes or fixed charges or allowance for depreciation.

The book shows the reported operating expense, which deducted from revenue gives a figure which is called "gross profit annually," instead of gross income. Then in a majority of cases a further deduction of "interest and depreciation" is made, which is apparently a computation made by Burns & McDonnell based on an allowance of 4 per cent on reported value for depreciation plus 5 per cent interest on reported debt.

THIS volume gives many times more information relative to municipal plants than I have found anywhere else. It covers plants all over the United States with nearly a dozen in Canada, Alaska, and the Philippine Islands. It has the advantage of reasonable uniformity of presentation of statistics and is a real contribution to our knowledge of municipal ownership.

The fourth edition omits several pages of so-called analysis of a propaganda nature which was included in earlier editions, and is evidently a sincere effort to secure and present accurate statistics in regard to this class of plants. It obviously presents all



Q "UNTIL municipally owned utilities are compelled to adopt the same accounting rules, and are subjected to the same publicity that the privately owned ones use, we will never know the truth about most of them. The good ones have nothing to conceal and most of these keep proper records and give good local publicity."

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that give anything like complete data.

It is to be regretted that the effort was not made to analyze operating expenses as fully as revenue, but possibly the results would not justify the effort. A real service has been performed in collecting the mass of data that is presented.

In view of the fact that this particular engineering firm has been long established and is widely known, and that its members have been active and consistent advocates of municipal ownership of public utilities for many years, it would appear that no possible charge of antipublic-ownership bias could attach to any conclusions properly to be drawn from the volume prepared and published by the firm.

I HAVE drawn off all of the information contained in the fourth edition in tabular form, classifying it into the eight population groups, described previously. General information as to age, type of plant, etc., is available as to the majority of the plants.

Of the cities listed in the book 9 are outside of the United States and were omitted in making the analysis, and 66 gave such incomplete data that costs per kilowatt hour or per customer or kilowatt hours per customer could not be computed. They were consequently tabulated separately in a Group IX which gives such data as is available and the reasons for not cluttering up the tables with these imperfect records.

The balance, 325 cities, were tabulated by population groups, and for every class of business, the total number of customers, kilowatt hours, and revenue was drawn off and computations made of kilowatt hours and rev-

enue per customer and revenue per kilowatt hour. The cities in each group were then studied, and totals and averages determined for each group.

THE three groups which include cities in excess of 25,000 population furnish quite complete data. Of 26 cities in the three groups 21 give residential data, 16 commercial data, and 22 power data in complete form. The groups of smaller communities give much less information, data as to classified sales being available for less than half of the towns with 7,000 to 10,000 population, and for a still smaller percentage in the three groups with very small population.

Groups I and II which include cities with over 50,000 population have 14 cities 5 of which are on the Pacific coast. All of them make a good showing of substantial business and low rates. Eleven of them are more than twenty years old. One is reported as nineteen years, one eighteen years, and one six years old. Seven of them are competitive. It appears quite obvious that one of them, Columbus, Ohio, must have been built primarily for municipal service and sells surplus energy for power and commercial service, only incidentally selling residential customers. Out of a total of forty million kilowatt hours sold and used but two million kilowatt hours were residential.

GROUP III, which include cities of from 25,000 to 50,000 population, shows substantially higher revenue per kilowatt hour and among the 12 cities are 2 with small power sales and high rates. Average revenue in cents per kilowatt hour for the three

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TABLE 3

	<i>Group I over 100,000 Per kw. hr.</i>	<i>Group II 50,000 to 100,000 Per kw. hr.</i>	<i>Group III 25,000 to 50,000 Per kw. hr.</i>
Residential	3.21¢	3.77¢	4.99¢
Commercial	2.39¢	not available	4.46¢
Power	1.04¢	1.83¢	2.08¢
Total sales to customers	2.09¢	2.73¢	3.39¢
Street lighting	2.31¢	1.45¢	2.75¢
Other municipal use	1.12¢	0.93¢	1.44¢
Operating revenue per kw. hr. generated ...	1.73¢	2.00¢	2.61¢
Operating revenue per kw. hr. sold and used	2.05¢	2.32¢	3.10¢
Operating expenses before depreciation	0.90¢	0.95¢	1.55¢
Operating expenses after est. of depr.	1.55¢	1.50¢	2.19¢



groups appears on the analysis as shown above in Table 3.

Only two of the plants in Groups I and II show a higher average residential revenue per kilowatt hour than 4.00 cents namely Jacksonville, Fla., 4.47 cents, and Columbus Ohio 4.86 cents. In Group III only one plant, Wyandotte, Mich., shows less than 4.00 cents, three are between 5.00 cents and 6.00 cents, and two in excess of 6.00 cents per kilowatt hour.

In the absence of very complete detailed statistics of operation and statement of policy of these plants there appears to be no ground for any criticism, and the showing of available data is highly favorable as to the two groups of large cities.

THE use of data derived from the statistics of the 14 largest city plants previously mentioned in estimating revenues and expenses to be hoped for in the case of a competitive plant in a small city of 15,000 population or less is wholly improper and unjustified. Equally improper is it to use average revenues based on a considerable number of communities including these 14; yet the advocates

of municipal ownership seem to have done that very thing.

The effect of the use of such operating revenues is clearly brought out by a study of total kilowatt hours sold and used in all of the towns reported by Burns and McDonnell.

These figures are as shown in Table 4, on page 373.

Thus it appears that 293 cities use or sell in the year 1934 a total of 2,676,807,420 kilowatt hours of which 62 per cent is sold by 14. Conclusions based on such "weighted averages" are bound to be highly misleading. They are "weighted" with grief for the small towns, as I shall later show by a frightful example.

A STUDY of all of the groups seems to indicate that Group III (population 25,000 to 50,000) is the border line group, most of the plants there reported apparently being good. Of these 12 plants 4 are over forty years old, 6 are thirty-three to forty years, one is ten years, and one eleven years old.

The statistics shown in Table 3 of the preceding article for the groups of the larger cities are in striking contrast

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to those for the other five groups of smaller places as set forth in Table 5, page 373, of this article. All figures are in cents per kilowatt hour.

The marked uniformity in each of these groups of total sales and sales per customer makes it very evident that classification is essential before any reliable average figures can be had for use in estimating. I question whether this has been done in connection with many of the estimates of revenue and expenses of plants now being built.

AN analysis of the individual cities in each of the groups developed the fact that two or three of the groups of smaller cities contained plants that were clearly not comparable with plants in the ordinary community of the same size. For example, Group V (7,000 to 15,000 population) shows results in 74 cities, all of which except 7 show total sales to customers of less than 2,000 kilowatt hours per customer per year, and with average cost per kilowatt hour varying from 2 cents per kilowatt hour to more than 5 cents, the average for all cities in the group being 1,385 kilowatt hours per year at an average of 3.54 cents.

Modesto, California, a hydro plant, serves more than 3,500 rural customers averaging 3,368 kilowatt hours per customer at an average of 1.83 cents per kilowatt hour. There is an unusually large use of refrigerators and ranges, as well as pumping water. The condition is an ideal one which can never be realized in any of the county-seat cities of that population group.

In like manner the hydro plants at

Idaho Falls with an annual sale of 3,772 kilowatt hours per customer at 1.88 cents per kilowatt hour and at Marquette, Michigan, with a sale of 2,877 kilowatt hours per customer at 1.98 per kilowatt hour are clearly not comparable.

With those three plants out, the average sale for the group is 1,273 kilowatt hours per customer at 3.79 cents per kilowatt hour. With the 3 cities included the average kilowatt hour per year sold to customers in cities of 7,000 to 15,000 was 4,310,000 kilowatt hours; excluding the 3 the average is 3,873,000.

THE figures that develop on an analysis of these municipal plants tend to discount the roseate estimates of starry-eyed and optimistic youth that made the plans for a good many of the small plants that are securing their financing by means of government loans and grants. One estimate that came to my notice in the group of cities of from 7,000 to 15,000 population was based on the sale of nearly double this amount of energy the first year and for the first five years would average two and one-half times this group average.

It would appear that, if we are going to have governmental participation in the electric business, and particularly governmental encouragement of the building of municipal plants, the people of these smaller communities ought to have the protection of government rejection of all applications that are based on insufficient estimates of construction cost or widely optimistic estimates of revenue and expenses. The group of towns of from 7,000 to 15,000 population, for

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TABLE 4

Group *	Total Cities in Group	Cities for Which Data Is Given	Total Kw. Hr. Sold and Used
I	8	8	1,483,655,808 kw. hr.
II	6	6	181,750,323 " "
Total for Group	14	14	1,665,406,131 " "
III	12	12	190,115,320 " "
IV	25	23	213,288,073 " "
V	75	65	316,322,889 " "
VI	75	63	168,144,282 " "
VII	89	74	93,268,123 " "
VIII	49	42	30,262,602 " "
	325	279	1,011,401,289 " "

* Group I population over 100,000; Group II population 50,000 to 100,000; Group III population 25,000 to 50,000; Group IV population 15,000 to 25,000; Group V population 7,000 to 15,000; Group VI population 4,000 to 7,000; Group VII population 2,000 to 4,000; Group VIII population less than 2,000.

TABLE 5

	Group IV 15,000 to 25,000	Group V* 7,000 to 15,000	Group VI** 4,000 to 7,000	Group VII 2,000 to 4,000	Group VIII Less than 2,000
Residential	4.55¢	5.40¢	4.88¢	5.37¢	6.37¢
Commercial	4.09¢	4.28¢	4.95¢	4.85¢	5.65¢
Power	2.05¢	2.36¢	2.76¢	2.80¢	2.57¢
Total sales to customers	3.51¢	3.79¢	3.97¢	4.31¢	4.53¢
Street lighting	2.32¢	1.53¢	1.40¢	1.97¢	1.76¢
Other municipal use	1.25¢	1.17¢	1.56¢	1.14¢	2.24¢
Operating revenue per kw. hr. generated	2.59¢	2.85¢	3.02¢	3.21¢	3.34¢
Operating revenue per kw. hr. sold and used	3.09¢	3.45¢	3.57¢	3.79¢	3.96¢
Operating expenses before depre- ciation	1.68¢	1.75¢	2.06¢	2.22¢	2.22¢
Operating expenses after est. of depreciation	2.17¢	2.31¢	2.64¢	2.80¢	2.85¢

* Excluding three noncomparable plants.

** Excluding two noncomparable plants.

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example, includes in addition to the three noted as noncomparable, 11 cities which sell more than 6,000,000 kilowatt hours per year.

THE 14 cities mentioned in Table 6 on page 375, have plants which on every count are the outstanding ones in the group. Eleven of them show very low rates and a very low average revenue per kilowatt hour. None of them are competitive. Only 2 of them are less than twenty-five years old. Only one has a considerable debt, but that is the newest and in many respects the best of the lot. To assume that a new competitive plant in a town of 10,000 people can in its first five years average as good or better kilowatt-hour sales than any of these 11 plants is absurd and ought of itself to be sufficient reason to reject the application.

The group of towns from 4,000 to 7,000, Group VI, also includes 2 very exceptional plants, and 16 that stand out in the matter of total sales, sales per customer, and average price per kilowatt hour. Turlock, California, a hydro plant, serves an irrigation district in the Sacramento valley. Its total sales to customers amounted to 127,709,265 kilowatt hours of which 95,583,526 kilowatt hours were wholesale power sold to the Pacific Gas and Electric Company at 0.35 cents per kilowatt hour and 32,125,739 kilowatt hours sold to 6,295 unclassified customers at 1.17 cents per kilowatt hour.

KAUKAUNA, Wisconsin, a hydro plant, shows total sales of 25,558,441 kilowatt hours of which over 20,800,000 was power at 0.83 cents per kilowatt and over 2,750,000 to

other utilities at 0.21 cents per kilowatt hour. Obviously these two hydro plants should have no part in any analysis of this group.

Including them, 70 plants show an average total sale of 4,045,000 kilowatt hours; excluding them, the remaining 68 plants average 1,910,041 kilowatt hours. This is an excellent illustration of how averages may be extremely misleading.

Space does not permit the presentation of data relative to plants in this group or in the two smaller groups. It is sufficient to say that careful study of the statistics of small plants indicates that there is no more likelihood of successful public ownership of isolated electric plants in communities of less than 4,000 population than there is of private ownership. There still exists a considerable group of small independent isolated companies whose showing is on the whole very poor.

THE analysis of the Burns & McDonnell statistics shows for the eight groups the data as to total sales to all customers as shown in Table 7 on page 375.

It will be noted that in Table 7 there are three items shown for Group V and Group VI. The first shows data for the very exceptional hydro properties that clearly classify with the best plants in the country. The second shows the complete group in the population classification and the third shows all of the plants that may reasonably be considered as normal in the population group.

THE studies of the Federal Power Commission published to date deal wholly with residential rates. An

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TABLE 6

City	Population	Age of Plant Years	Amount of Debt	Total Kw. Hr. to Customers	Avg. Kw. Hr. per Customer	Avg. Rev. per Kw. Hr.
Palo Alto, Cal.	13,652	34	\$192,000	8,123,742	1,521	3.10
Wallingford, Conn.	11,170	35	No data	6,327,232	1,647	3.72
Winnetka, Ill.	12,166	34	None	6,266,148	1,887	4.80
Crawfordsville, Ind.	10,355	34	None	7,098,370	1,636	2.87
Frankfort, Ind.	12,196	25	None	7,609,886	1,427	2.93
Ottawa, Kan.	9,563	29	None	6,157,308	1,870	2.42
Holland, Mich.	14,346	39	None	7,008,129	1,336	3.09
Columbia, Mo.	14,967	31	No data	6,489,231	1,433	4.04
Fremont, Neb.	11,404	39	None	6,302,136	1,706	2.92
Painesville, Ohio ..	10,944	30	53,000	7,737,000	1,810	2.52
Blackwell, Okla. ..	9,521	20	None	7,552,276	2,601	2.02
and including those classed as not comparable, being hydro plants,						
Modesto, Cal.	13,842	11	1,015,000	22,372,000	2,788	2.21
Idaho Falls	9,429	34	62,000	9,334,500	3,772	1.88
Marquette	14,789	44	None	11,596,000	2,877	1.98

TABLE 7

Group	(1) No. of Cities	(2) Avg. Total Kw. Hr. Sold per City	(3) Kw. Hr. per Customer	(4) Revenue per Customer	(5) Revenue per Kw. Hr.
I	8		2,525*	\$52.87*	2.09**
II	6	33,275,646	1,608*	43.94*	2.73*
III	10	12,052,750*	1,387*	47.06*	3.41*
IV	23	7,484,740*	1,374*	48.24*	3.48*
V	3 excep. cities	14,434,144	2,980	61.78	2.07
V	71	4,201,080	1,383	47.00	3.36
V	68	3,757,975	1,234*	44.23*	3.51*
VI	2 excep. cities	76,633,853	169,563	109.08	0.643
VI	70	4,045,007	2,255	48.93	2.17
VI	68	1,910,040*	1,115*	44.26*	3.97*
VII	84	1,001,300*	1,013*	43.66*	4.31*
VIII	48	548,300*	946*	42.89*	4.53*

* Items marked with an asterisk indicate normal average for population groups.

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examination of the typical bills given in the reports of the commission indicates quite plainly that in most of the publicly owned plants special emphasis is laid on the small consumer, the patron whose monthly consumption is 15 kilowatt hours, 25 kilowatt hours, or 40 kilowatt hours, and that the consumers of 100 kilowatt hours to 500 kilowatt hours per month are apt to be charged very much more than the rates of the commercial power companies. A study of residential rates as they appear on analysis of the Burns & McDonnell book discloses the averages as shown in Table 8 on page 377.

The high cost per kilowatt hour and the low average consumption in Group III (population 25,000 to 50,000) is due wholly to small energy sales and high rates of the plants at Norwalk, Conn., Orlando, Fla., and Mishawaka, Indiana, the three of which show average sales for the plants of 2,485,000 kilowatt hours per year at an average of 6.15 cents per kilowatt hour.

IT must be remembered that these Burns & McDonnell figures, owing to incomplete returns from many plants, deal only with 315 plants which permit computation of total sales to all customers and 177 which show residential sales. In view of the fact that the census of electrical industries of 1932 gives 1,802 as the number of municipally owned establishments, and the 1934 publication of the Public Works Administration lists 1,861 city-owned plants as giving service available to the community, the question may be very properly asked whether the small number analyzed give results that are typical. Fifty of these 1,861 towns are shown as being served from

other communities, and no meters are shown. This makes the net total 1,811 active plants.

A further study was made by taking the plants shown on the Burns & McDonnell fourth edition and adding to the list all plants which give reasonably full data in the second and third editions and which do not appear in the fourth. This gave a total of 436 municipal plants. Then all of these plants were checked on the PWA list of cities. This list gives the name of the city or village, the county, the population, the type, and kilowatt capacity of generating plant, indicates whether energy was purchased or not, and gives the number of meters. There is no data as to kilowatt hours generated or purchased, revenues or expenses, or any other information except a few remarks as to ownership, competitive character of the plant, or whether service of one community is from the plant of another. It is a substantially accurate list of publicly owned plants in the United States and nothing more.

ALL of the plants for which statistical reports are available were noted on the list and all remaining plants for which no statistical data is available were classified under the eight population groups. The result was as follows:

Groups

I & II including all cities with population in excess of 50,000 ...	None
III Population 25,000 to 50,000— Bay City, Mich., High Point, N. C., and Sioux Falls, S. D.	3
IV Population 15,000 to 25,000 ..	11
V Population 7,000 to 15,000 ..	38
VI Population 4,000 to 7,000 ..	105
VII Population 2,000 to 4,000 ..	216
VIII Population less than 2,000 ...	1,001
Total municipal plants on which statistics are not reported	1,374

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TABLE 8

Group	No. of Cities	Avg. Residential Kw. Hr. Sold per City	Kw. Hr. per Customer	Revenue per Customer	Revenue per Kw. Hr.
I	8	.....	788*	\$25.34*	3.21¢*
II	3	15,186,258	687*	25.90*	3.77*
III	8	3,901,468	564	28.14	4.99
IV	15	2,902,935*	603*	27.42*	4.55*
V	36	1,594,570*	613*	33.08*	5.40*
VI	1	(Kaukauna, Wis.)	985	34.27	3.48
VI	38	867,883	636	30.42	4.78
VI	37	829,500*	620*	30.23*	4.88*
VII	41	440,813*	549*	29.49*	5.37*
VIII	29	225,930*	471*	30.00*	6.37*

* Typical of group average.

TABLE 9

Group	No. of Plants	Kw. Hr. Sold	Kw. Hr. Avg. per City	Revenue	Avg. Rev. per Kw. Hr.
Exceptional Hydro Plants of V & VI	5	207,181,454	41,436,291	\$1,947,430	0.94¢
I	8	1,483,655,808	185,457,000	30,408,226	2.05¢
II	6	181,750,323	30,291,700	4,218,577	2.32¢
III	12	190,115,320	15,842,776	5,893,819	3.10¢
IV	23	213,288,073	9,273,400	6,588,069	3.09¢
V	62	289,413,304	4,667,900	10,402,374	3.29¢
VI	62	140,627,694	2,268,200	5,015,521	3.57¢
VII	74	93,268,123	1,260,000	3,530,363	3.79¢
VIII	42	30,262,602	720,600	1,196,943	3.96¢
Total	294	2,829,562,701		\$69,201,322	2.44¢

TABLE 10

	5 mos. 1930	1931	1932	1933
Gross revenue less discount ..	\$28,411	\$78,166	\$79,562	\$76,894
Operating expenses	10,826	31,708	31,255	30,218
Gross income	\$17,585	\$46,458	\$48,307	\$46,676
Loss capital asset .....	.....	.....	\$722	\$2
Other deductions:				
Bond interest	\$26,042	\$62,500	61,354	60,104
Other interest	5,536	11,942	10,791	13,295
Bond discount	553	1,327	1,299	1,271
Reserve bad debts	773	2,122	2,155	2,075
Total	\$32,904	\$77,891	\$76,321	\$76,747
Deficit before depreciation ...	15,319*	31,433*	28,014*	30,071*
Depreciation	13,869	34,338	35,548	36,000
Loss	\$29,188*	\$65,771*	\$63,562*	\$66,071*

* Red.

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I think that it is fair to assume that officials of municipal plants that do not report their operations when asked to do so, especially when requested for a publication which was issued annually for four years, and which could by no stretch of the imagination be considered hostile to public ownership, have some substantial reason for not wishing to make a public record of their statistics, if indeed the smaller plants have records.

My analysis of the Federal census figures of 1932 made when it was issued convinced me that except in the case of a small number of very excellent city-owned plants the rates given by such plants are higher than those of commercial plants.

My examination and analysis show very positively the small part that municipal plants play in the electric industry in spite of having 52.5 per cent of the "establishments." And incidentally the 55.34 per cent of internal combustion output indicates the source of a great deal of the propaganda for municipal ownership in small towns.

Pages 60 to 63 of the Census Report show number of customers, current sold, and revenue from electric service for commercial and municipal plants, giving the total sales and the breakdown into classes of business. Average revenues for total business are shown as 2.7 cents per kilowatt hour for the United States average for commercial companies and 3.1 cents per kilowatt hour for municipal plants. The municipal plant average shows higher than those of private plants in every one of the nine geographical divisions, the highest being

4.8 cents in the East South Central division.

The 294 plants tabulated from the Burns & McDonnell book make a distinctly better showing than indicated by these census bulletin figures. Taking the total energy sold, including all municipal use whether free or not, and total revenue, the showing is as follows: [See Table 9, on page 377.]

It will be noted at once that the 8 plants in Group I and the 5 hydro plants taken out of Groups V and VI as already discussed sell 60 per cent of all the energy produced by the 294 plants.

The remaining 281 plants sell 1,150,512,338 kilowatt hours at an average of 3.21 cents per kilowatt hour which is a considerably lower average than that of municipal plants in any geographical districts except East North Central and Pacific as reported in the Federal Census.

Evidently the plants answering the questionnaire are not really typical but on the contrary the best municipal plants in the country. Every municipal plant in cities of over 50,000 and all but 14 in cities of over 15,000 population have submitted statistics for the Burns & McDonnell publication. The 1,360 plants in towns of less than 15,000 population are obviously not so good. Those which have submitted partial statistics not capable of analysis are most of them far from good. The statistics given are, I believe, the very best showing that can be made for publicly owned plants.

When a similar analysis is made of residential sales the 178 cities in the eight groups which give the information show an average of 3.89 cents per

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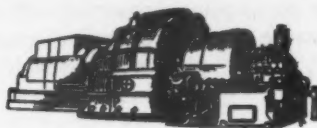


TABLE 11

Year	Customers	Kw. Hr.	Revenue	Kw. Hr. per Customer	Rev. per Customer	Rev. per Kw. Hr.
5 mos. 1930	.....	1,385,000	\$28,411	.....	.....	2.051¢
1931	1,052	3,651,000	78,166	3,470	\$74.30	2.141¢
1932	1,039	3,750,000	79,562	3,609	76.57	2.121¢
1933	1,045	3,555,000	76,894	3,402	73.63	2.163¢

TABLE 12

From Federal Power Commission Bulletin for Georgia

	Minimum bill	15	25	40	100	150	250	500	
	Kw.	Kw.	Kw.	Kw.	Kw.	Kw.	Kw.	Kw.	
	Amount	Hr.	Hr.	Hr.	Hr.	Hr.	Hr.	Hr.	
Rates at Cordele Power Co. and Crisp Co. plant ..	\$1.00	none	\$1.58	\$2.03	\$2.70	\$4.50	\$4.84	\$7.70	\$10.20
Georgia Power Co. Stand. elsewhere	1.00	15	1.00	1.62	2.37	4.57	6.07	8.32*	10.32
Georgia Power Co. objective elsewhere	1.00	15	1.00	1.45	2.12	3.95	4.95	6.57	8.57*

* Hours of use limited.

kilowatt hour. If only cities less than 50,000 population are considered the average is 5.02 cents and if only cities of 15,000 or less are taken into account the average is 5.27 cents per kilowatt hour. The Federal Census figures are 4.7 cents per kilowatt hour for the United States; 4.6 cents for East North Central; 5.8 cents for West South Central (the highest) and 3.3 cents for Pacific (the lowest).

CERTAINLY the conclusion is unavoidable that the more than 1,300 plants about which we know nothing would show an overwhelming percentage with small sales, very low individual consumption, and very high

rates, and would either bring up the average revenue per kilowatt hour substantially, or prove to be unprofitable. The burden of proof is on the advocates of municipal ownership.

I have referred to a large group of plants in the Burns & McDonnell report which do not give sufficient data to permit analysis. There are 65 of them, ranging in size from Lincoln, Nebraska, 76,000 population, to Tombstone, Arizona, with less than 1,000 souls.

Most of these plants fail to report kilowatt hours sold. Many fail to report number of customers and none of them give enough data to permit comparison with other plants. Ten of

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them are less than five years old. Eleven are reported as competitive plants. Some of them cause one to wonder.

LAGRANGE, Georgia, 20,131 population, makes no report of kilowatt hours sold or customers but reports total revenue of plant \$141,895. The average of the 23 cities which report in Group IV is \$284,440. The plant is thirty-nine years old.

Bloomington, Ill., 30,930, has a competitive plant said to be four years old. It reports:

Total Aug. 15, 1930, to Jan. 31,	
1934, Revenue	\$81,151
Operating Expenses	44,856
Gross Profit	\$36,295
Interest & Depreciation ...	14,103
Net Profit 3 yrs. 5½ mos.	\$22,192

No data is given as to investment debt, kilowatt hours sold, or customers. The average operating revenue of the 12 cities in Group III is \$524,000 per year. The 2 cities in the group making the poorest showing report \$215,000 and \$251,000. It would be of interest to know what arguments were advanced when this plant was built and what were the estimated revenues. Several other plants in this list indicate either that citizens of communities have been led into construction in recent years that was ill advised, or that the old plants have had many, many years of unprofitable operation.

ONE case is such an excellent example that it cannot be lightly passed by. The Crisp county, Georgia, plant is reported to be four years old, a hydro and steam plant of 8,900-kilowatt capacity, with a debt of \$1,123,000. 5,500,000 kilowatt hours of en-

ergy (presumably total generated), is reported with a revenue of \$85,000; operating expenses, \$30,000; "gross profit annually," \$55,000.

In this case Burns & McDonnell did not deduct interest and depreciation. Inasmuch as they say that the plant cost approximately \$2,000,000 the computation made for other plants would result in a deduction of \$136,150, which was not made. A series of inquiries developed a most interesting story that is worth the telling.

The Crisp County Power Commission was created in 1925 and authorized to increase the bonded debt of the county for the purpose of constructing an electric power plant. A special election in April, 1927, approved and authorized \$1,250,000 bonds bearing interest at 5 per cent. A contract was entered into with L. E. Meyers Company, Inc., of Chicago, to build the hydroelectric plant, but it was actually built by subcontractors S. J. Groves & Son Co. It was completed and put in operation August 1, 1930.

THE Federal Power Commission found the actual cost of construction of the project to be \$1,345,478.09 as of July 31, 1930. Some of the funds derived from the sale of the bonds were lost in a bank failure. On August 1, 1930, the commission owed Groves & Son Co. \$158,981.50 of which \$34,218.96 of principal was paid in 1931. On September 29, 1933, the U. S. District Court awarded a judgment in favor of S. J. Groves & Son Co. for \$124,762.54 plus interest of \$18,922.32 and enjoined the commission from using any excess net receipts for additions or betterments.

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Sources of information as to this plant are not hard to find. An audit of the affairs of the Power Commission, dated February 28, 1934, made for the commission by M. H. Barnes & Company, certified public accountants, which gives figures for 1930 to 1933, both inclusive, is on file at Cordele, Ga. S. J. Groves & Son Co. want their money, and in the effort to get it have issued two pamphlets distributed to citizens of Crisp county. One, dated April 2, 1934, is a 14-page booklet captioned "An Appeal to Fair Minded Citizens." The second, an 8-page pamphlet, undated, is captioned "Taxes and the Power Project."

THE Crisp county plant serves the city of Cordele, Georgia, population 6,880, through the medium of a distribution system built by a separate city bond issue of \$85,000 of 5 per cent bonds. This was leased by the city to the Power Commission at an initial rental of \$13,200 per annum which amount has been a matter of controversy, and it is said has since been reduced a considerable amount.

Data as to operating statistics, derived from the audit report, are shown in Table 10, on page 377.

A total operating deficit of \$224,586 in the three years and five months

is quite a different story from "gross profit annually" of \$55,000.

FROM the same audit report the figures in Table 11, on page 379, are derived, the last three columns being computed.

There is nothing to indicate whether these kilowatt-hour figures represent sales or generation. If these figures are correct as to total kilowatt hours sold the kilowatt-hour use per customer is exceedingly high and revenue per customer comparable with Los Angeles.

The worst remains to be told however. The county commissioners advanced to the Power Commission up to December 31, 1933, some \$286,000 to pay interest and retire bonds. The county tax rate in 1927, prior to the bond issue was 13 mills. The tax rate now is 26 mills, 100 per cent increase, the highest in the state of Georgia. The amount levied to care for bonded debt (nearly all for the hydro plant) is 18 mills.

When the plant was put in operation rates were established 10 per cent below rates then in effect by the Georgia Power Company. Since then the power company has made statewide reductions in rates, the situation at Cordele having nothing to do with it. The Federal Power Commission re-



"It would appear that, if we are going to have governmental participation in the electric business, and particularly governmental encouragement of the building of municipal plants, the people of these smaller communities ought to have the protection of government rejection of all applications that are based on insufficient estimates of construction cost or widely optimistic estimates of revenue and expenses."

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port for Georgia gives bills for various amounts of domestic power at Cordele.

THE rates of the power company and the Crisp county plant for Cordele are shown in the report to be identical but elsewhere in the state rates for the power company are lower, as shown in Table 12, on page 379.

The objective rate is available to all customers who use more power than in the corresponding month of the previous year. Since the publication of the Federal Power Commission's report the statewide rates of the power company have been extended to Cordele. Could there be a more tragic story of a terrible mistake?

LET us revert to the questions previously asked in this article:

"Is the business of this community sufficient to properly support the proposed enterprise, retire the indebtedness, and keep the plant in condition to render adequate service when publishing rates as low or lower than those of the private plants?"

"What has been the experience of other communities, of comparable size and similar characteristics, which have gone into the light and power business?"

The Federal government quite obviously has no reliable data as to these 1,811 or more municipal plants.

The Federal Census reports give comparable data as to statistics of

publicly owned and privately owned plants but census officials have studiously avoided giving any data as to individual plants or companies.

The Public Works Administration has made a list of cities, the only statistical data for comparison being kilowatt capacity of prime movers and meters. The two Federal agencies are not in exact agreement. The census gives number of machines. PWA gives the number of plants in which they are located. The comparison is shown in table below:

The Federal Power Commission has issued rate comparisons for each state, listing the towns, and indicating whether one or more plants offer service. I have not checked these against the PWA lists. The Burns & McDonnell book discloses the fact that there are probably a few errors in each of the Federal agency reports.

WE have therefore three Federal agencies reporting but no full, complete, and accurate authoritative data as to statistics of operation. I am of the opinion that the Federal Power Commission is the agency to make this study. That commission should have authority over accounting and statistics for the sake of uniformity. The task of securing this data should not be left to individuals, to private companies, or to associations of the industry. We should be able to refer to unprejudiced and author-



KILOWATT CAPACITY OF PRIME MOVERS

	Steam	Internal Combustion	Hydro	Total	Customers or Meters
Census of 1932 ..	1,173,599	254,843	546,534	1,974,976	2,227,749 customers
PWA list of 1934	1,111,799	279,443	490,583	1,882,645	2,291,373 meters



Private versus Political Management

"I AM convinced that much better results can be obtained from operating organizations which are responsible to a competent private management and boards of direction which must show economical operation, adequate upkeep, good public relations, and a profit than can possibly be secured from a national bureaucratic or a local political organization which is responsible to a constantly changing, short-lived political administration without any financial responsibility as to the result."

itative government reports for the facts.

As to whether the Public Works Administration has analyzed estimates of revenues and expenses of proposed plants, and compared them with actual results of existing plants is a matter which of course that agency alone can answer. One case that has come to my attention leads me to think that no such analysis was made, because the estimated total sales to customers was double the experience of the average of 63 old, long-established plants of the same size, and nearly double that of the best year of the existing company, while estimated revenue per kilowatt hour was substantially below any reasonable figure indicated by statistics of communities having similar population and characteristics.

MY own studies lead me to the definite conclusion that no community of 15,000 or less can hope to build an isolated plant, enter competition

with the existing company, establish rates that are lower than present rates, and make a success of the business. It is very certain that small towns cannot possibly do so, and there are reports from some cities between 25,000 and 50,000 population that indicate poor plants and high rates.

During the years prior to the depression hundreds of municipal plants in small towns which had proven to be unprofitable or which were giving unsatisfactory service were sold to the large power companies. I have in my practice had to make valuations of a number of such plants and have inspected and reported on a good many more. I have seen poor, out-moded plants in small towns sold, completely scrapped, and replaced by new substations and distribution systems, so that six months after the sale an inventory would have shown practically none of the property that was bought, and along with this reconstruction went a reduction in rates.

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I HAVE made no attempt to secure a complete list of such sales in all of the states, but I do have listed municipal plants that have been transferred to commercial ownership, 104 in Illinois, 102 in Michigan, and 66 in Georgia, the latter being only an incomplete list of sales from 1925 to 1929 inclusive, with 3 plants sold in 1930 and 1932.

These 272 municipal plant sales were in small towns, not over 8 or 10 of them being in cities in excess of 7,000 population. Some of them had proven failures, some of them were giving fair service at fair rates but could not reduce their rates and continue to show a profit, therefore the city officials took advantage of the opportunity to get out of the business without a loss. This being the record for three states it seems fair to assume that the total of such failures may run up to a good many hundred for the country as a whole.

One of the most complete and exhaustive studies that has yet been made of municipal ownership in any state is that of the Michigan Municipal League, published in Bulletin R4 in 1934. This study was made over a period of a year or more. All plants were visited and all available facts were assembled.

THE volume is an impartial, fair, and honest report, made under the auspices of the league of cities of the state, therefore is free from any charge of hostility to municipal ownership. Municipal plants are owned by 3 cities with population between 25,000 and 100,000, 6 between 7,000 and 15,000, 9 between 4,000 and 7,000, and 27 with less than 4,000

population, a total of 45 which give general electric service to the community, and 7 which furnish street lights and municipal service only. Thirty-six of these plants are over thirty years old, 9 between twenty and thirty years old, and 2 of the remaining 8 are less than fifteen years old, so that they may be taken as a fairly typical group of old plants. The author says:

An analysis of each plant has been attempted . . . but it should be pointed out that because of the almost complete lack of operating and financial records concerning certain plants it is impossible to present comparable data for each utility.

My study of this report shows that the following facts are developed as to towns of 15,000 and less:

NO data as to fixed assets was furnished by 5 plants, although presumably records existed. Seventeen plants kept no record of fixed assets. Twenty-three carried no depreciation account, and made no charge to operating expenses, or appropriations from surplus for that purpose. Nineteen kept no record of classified operating expenses. Six kept no record of energy generated or purchased. Only 11 reported full details of residential, commercial, power, and municipal use while 31 have no data except total sales. Curiously enough it appears that 2 plants have no record of meters in use. Twenty make no charge for street lighting and 27 pay no taxes.

Most of these little towns make a financial showing which indicates that either the creation of adequate retirement reserves, the payment of taxes on anything like the basis that private companies do, or any lowering of rates, would bring about a crisis.

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An analysis of the Federal Power Commission rate comparisons for Michigan is of interest. The commission lists 40 towns with municipal plants instead of 36, the difference being due to adjacent cities served by one plant, as for example the Lansing plant serves East Lansing and Potterville. In this instance the Michigan study counts only one plant, the Federal Power Commission 3.

THE Federal Power Commission bulletin shows typical bills in every community. The great majority of towns in the lower peninsula of Michigan are served by 2 large power companies. One of them serves 81 cities with a population of 2,063,000. The other covering a much greater area serves 221 cities and villages with a population of 990,000. Both companies have uniform rates over their entire territory, the hamlet of fifty people getting the same rates for the same consumption of energy as the city of 50,000.

The 40 small municipal plants, when rates are tabulated as given by the Federal Power Commission, and compared with rates of the 2 power companies, show up as follows:

29 communities have higher rates than the commercial plants for	15 kw. hr.
34 communities have higher rates than the commercial plants for	25 kw. hr.
36 communities have higher rates than the commercial plants for	40 kw. hr.
34 communities have higher rates than the commercial plants for	100 kw. hr.

The same or better showing is made for commercial plant rates in the bills for 150, 250, and 500 kilowatt hours.

The only small communities which show uniformly lower rates in all brackets than those of the power companies are Coldwater (forty-six years old) and East Lansing, and Potterville served by the excellent Lansing plant. Hillsdale (forty-three years old) and Crystal Falls (hydro, forty-seven years old) are higher on only one bracket, and Marshall (forty-four years old) is lower on all brackets below 100 kilowatt hours' use.

CERTAINLY so far as rates are concerned the people living in more than thirty of these little Michigan cities and villages would be better off if served by the power companies.

For the past three or four years the village of Clinton, Michigan, has rather extensively been advertised as a "tax free" town whose electric light plant has paid its expenses of village government.

Information on this plant is hard to get, and irreconcilable when secured. Bulletin R4 reports for the fiscal year ending February 28, 1933, total revenues of \$23,736 and total plant expense \$24,906, with a resulting loss of \$1,170. The published village reports indicate revenues of \$29,405 in 1931, \$20,528 in 1932, and \$20,568 in 1933; a total of \$70,501 in three years. Expenses were \$28,540 in 1931, \$21,944



Q "My own studies lead me to the definite conclusion that no community of 15,000 or less can hope to build an isolated plant, enter competition with the existing company, establish rates that are lower than present rates, and make a success of the business."

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in 1932, and \$18,585 in 1933, or a total of \$69,069 with a resulting gain of \$1,532 in three years.

The total balance of the various village funds on hand at the beginning of each fiscal year is reported as follows:

March 1, 1930	\$31,474
March 1, 1931	31,267
March 1, 1932	16,689
March 1, 1933	9,216
March 1, 1934	3,788

It appears that early in 1931 citizens were demanding tax relief and the village council decided to make no tax levy. On February 1, 1932, electric rates were reduced. The reported revenues, above given, show clearly the effect of the rate reduction and they also make it very plain that the "taxless" condition in Clinton was not due to the electric plant unless the 1930 balance was due to accumulations of previous years.

DURING the fiscal years beginning March 1, 1931, 1932, and 1933 the reported expenses for the electric plant were as shown in table below:

In the three years previous to these, wages had been in excess of those of 1931 while supplies and repairs were much higher having averaged \$15,-673 per year for the 3-year period.

It is therefore evident that cutting out of the village tax levy was responsible for wiping out the balance in the treasury, and that the reduction in electric rates so crippled the plant as to compel a drastic reduction in wages and maintenance expense in order to break even. The sequel is interesting.

On November 1, 1935, electric rates were increased some 20 per cent to 25 per cent on the average bill and residents of the village pay substantially higher rates than the power company serving the surrounding territory.

It is further reported that in July, 1934, the village purchased a new Diesel engine at a figure slightly in excess of \$29,000, and that in March of 1935 village taxes were again levied.

THE problem of taxes has become most serious for privately owned companies in recent years. The Census Bulletin shows that in 1932 the power companies paid over \$203,850,000, or nearly 11 cents on the dollar of operating revenues, while the city-owned plants paid less than \$1,300,000 or slightly over one cent out of every dollar. The Michigan Municipal League study shows that taxes were paid and reported in the fiscal year of 1932 by only 9 city-owned plants, while 3 other plants report taxes included in some other expense account. The total reported is \$60,011. Marquette, Holland, Escanaba, and Grand Haven plants paid substantial amounts, approximating 5 per cent to 6 per cent of revenues. The other five contributions were insignificant in amount and percentage of revenue.

In 1933 I examined the reports submitted by power companies to the Michigan Public Utilities Commission covering the four groups of companies for the year 1932 and found that

	Wages	Coal and Freight	Supplies & Repairs	Other	Total
1931	\$9,152	\$6,972	\$10,994	\$1,432	\$28,540
1932	8,493	6,721	5,567	1,162	21,944
1933	6,658	6,734	3,739	1,454	18,585

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The Public Should Know the Facts

"WHEN the campaign for extension of public ownership is based upon propaganda which depends on untrue statements and distorted facts, then it becomes a form of racketeering which can only be suppressed by a full and honest finding of all of the true facts by an authoritative governmental agency whose statements can be accepted as final. The time for such a study and report has arrived."



5 companies having operating revenue in excess of \$1,000,000 paid taxes to the amount of \$8,886,888, or 12.19 per cent of operating revenue; 9 companies with revenue from \$250,000 to \$1,000,000 paid \$421,404 in taxes or 9.20 per cent of operating revenue; 8 companies with operating revenue over \$100,000 but less than \$250,000 paid \$140,261 or 10.10 per cent. The total for the three groups being \$9,442,753 taxes or 11.97 per cent of operating revenue. There are 10 small companies with revenues of less than \$100,000. Total taxes paid by them were \$31,095 or 7.15 per cent of operating revenue.

IN 1935 a study of one power company serving two cities and several villages, with average revenues for the six years 1929 to 1934 of over \$600,000 showed taxes paid in the following percentage of total revenue.

1929	11.41%
1930	12.01%
1931	12.65%
1932	13.86%
1933	13.01%
1934	13.43%

Average 6 years 12.67%

No comparison of rates between city-owned and private power compa-

nies can be made without a careful study of taxes paid by the private company, the policy of the municipal plant in respect of taxes, and a proper equating of the rates to get the true effect of the tax burden of the commercial company. One argument that has been recently advanced by advocates of public ownership is that the power companies receive more money for street lighting than is paid in taxes. This with the advocacy of free municipal service by city-owned plants leads us back to the study of the Burns & McDonnell book.

IN Group III, comprising cities of from 25,000 to 50,000 population, 11 of the 12 cities charge for street lighting, one giving no data, the average charge being 2.75 cents per kilowatt hour. The revenue of \$393,759 for street lighting is 7.1 per cent of the operating revenue of these plants.

In Group IV, comprising cities of from 15,000 to 25,000 population, 17 cities charge for street lighting an average of 2.99 cents per kilowatt hour, resulting in a revenue from this source of \$391,714 or 7.8 per cent of the operating revenue.

Power company taxes throughout

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the country range from 8 per cent to 9 per cent to as high as 14 per cent or 15 per cent, averaging approximately 12 per cent. It is obvious that this group of 28 cities is paying far less for street lighting than private power companies would be assessed for taxation.

And why should a city have street lighting or water pumping "free?" To put it another way, why should the consumers of residential and commercial power be compelled to pay for street lighting for the benefit of every one in town or save water consumers from paying a fuel bill for water pumping? Forty out of 51 city-owned plants of over 15,000 population do very properly charge for such services, all of them at a profit, one or two at extremely high rates.

THIRTY-TWO of the 74 cities in the group of from 7,000 to 15,000 population furnish free street light. Nineteen furnish other free service. Twenty-nine of the 75 cities in the group of from 4,000 to 7,000 population, furnish free lighting, 20 give other free service, and 8 give no data. Four or five illustrations are enough to show who pays for "free" power in these two groups. [See Table 13, page 389.]

The report of Henderson, Kentucky, where 48.6 per cent of all current sold or used is free is illuminating. [See Table 14, page 391.]

This shows how high residential commercial, and power rates, resulting in an average rate on total sales to customers, practically 2 cents per kilowatt hour above the average for the group, can be diluted so as to bring it exactly to the average of Group V,

2.91 cents per kilowatt hour. It makes one wonder just what sort of a showing would be made by a full report from those plants which only permit one figure to appear, namely revenue per kilowatt hour for all energy sold and used.

There are a number of such cases—to cite a few,

New Ulm, Minnesota	5.33¢ per kw. hr.
Bartow, Florida	6.42¢ per kw. hr.
Ipswich, Massachusetts	5.15¢ per kw. hr.
Alliance, Nebraska	5.11¢ per kw. hr.

I can see no possible justification for compelling home owners and users of commercial power to carry the burden of this service to other groups of people.

IAM impressed by the inconsistency of the municipal ownership advocates who urge the building of city-owned plants so that the citizens can get the benefit of lower rates than those given by the power companies, and then talk about "free" street lights, "free" municipal service, and "tax-free towns," like Clinton, Michigan, which has been discussed. On the inside front cover of the second edition of Burns & McDonnell's book "Results of Municipal Lighting Plants," is found this statement:

What is meant by the reference to a tax-free or partly tax-free city is a city where the profits (of the municipal plant), which would go to the owners of a privately owned plant, are kept by the city and used to pay part or all of the operating costs of the city, or to build municipal improvements which would otherwise have to be paid by taxes.

Henderson, Kentucky, seems to be a good example of the application of this doctrine. Three thousand six hundred thirty-four patrons pay for almost twice as much power as they use in order that the city may pay for other services for which the cost

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would normally be fifty or sixty thousand dollars.

Much more might be said, but I have given enough in the way of illustration of my points.

THE present administration is doing no favor to the people of these seventy-eight cities which have secured Federal loans and grants by handing out the money without first making a complete and exhaustive study of the actual results of municipal ownership in the hundreds of communities which now possess such plants.

While there are a good many plants that are eminently successful, there is not such a record on the part of public ownership as to guarantee success in all cases or to justify the belief that competitive plants can equal the record of the long-established noncompetitive ones.

The record as it stands constitutes a challenge to the government to make an impartial and thorough investigation of not only rates but operating results before wasting even such "cigarette money" on the \$13,176,220 now allocated to cities of 15,000 and less on the building of certain failures, and encouraging the citizens of these little cities and small villages to burden themselves for years to come.

NOR is the publication of typical bills for different amounts of energy sufficient. The bulletins of the Federal Power Commission are good as far as they go, but that body should go much further. The rate comparisons serve no good purpose, and may be very misleading unless along with them is given data as to taxes, contributions made by plants toward other city enterprises, or transfers to other city funds, or the extent of free service that is given, such as service on upkeep of appliances or free lamp renewals.

Furthermore, the publication of comparative rates does not disclose whether any plant is earning a sufficient revenue fully to maintain the property so that it can render a high class of service, or whether it is a bankrupt concern with construction that is inferior and badly run-down.

On pages 4 and 5 of Rate Series No. 1, the Federal Power Commission discusses the complexity and variety of electric rates and points out the fact that there are many factors that compel differences in rate levels, such as the character and density of population and diversity of consumers' requirements both as to time of day and amount used, seasonal usage, and accessibility to fuel or water power.

TABLE 13

City	Residential		Total sales to customers		Free Mun. Use		% that free is of total
	Total Kw. Hr.	Avg. per Kw. Hr.	Total Kw. Hr.	Avg. per Kw. Hr.	Total Kw. Hr.		
Albany, Ga.			3,301,565	4.72¢	1,423,200		30.1%
Madison, N. J. ...	1,234,507	8.76¢	1,843,328	7.35¢	589,994		24.2%
Thibodaux, La. ...	228,622	8.87¢	468,622	7.71¢	340,000		42.0%
Georgetown, S. C.	175,751	10.94¢	459,608	6.98¢	346,882		43.0%
Average Kw. Hr.							
Group V		5.24		3.43			
Group VI		4.88		3.97			

THE Commission wisely contends for simplification and standardization of rate forms, a task that some of the state commissions are working on at the present time. This, however, can only be brought about when there are available complete data as to the operating statistics of each property and the effect of the published rates on the consumers. Comparison of typical bills would be of value if we could be assured that the assumptions made in computing some of them (particularly those under complex rates structures) were correct. As regards some of the large Michigan companies it may be said that the Federal Power Commission's typical bills are correct on the assumption made, but the assumption does not line up with actual operating facts with the result that the figures given are substantially higher than rates actually paid by some thousands of customers.

The Federal Power Commission says:

Because of these variables it is advisable to exercise some caution in making comparisons of rates between one place and another and one type of service and another. In other words some discrepancies may be due to unprogressive rate policies, while others are due to conditions beyond the control of the companies serving various communities.

THE Federal Census of Electrical Industries of 1932, in discussing commercial and municipal establishments, says on page 49:

In comparing data for commercial and municipal establishments, the reader must bear in mind that these two types operate on a different basis. Due consideration must be given to size of operation, source and cost of energy, local operating conditions, types of service, type of equipment, and other factors before valid conclusions can be drawn in regard to rates and service.

The Missouri commission sums up

the question of comparison of rates as follows (page 15, 1934 report):

The publicly owned plant is usually financed by the issuance of *ad valorem* bonds, the interest and principal of such bonds being paid by direct taxation. Various other proper charges are not directly reflected in the rate structure. Among such items are taxes which in 1934 amounted to 12 per cent of commercial plants' gross revenues. Other benefits accruing to municipal plants are free rents, legal services, administration, and in many cases the occupation of lands originally acquired for other purposes, also nonpayment of licenses and occupation fees. Certain municipal plants make no separation of expenses common to electric, water, and other departments. Moreover municipal plant liens are not always a direct lien on the property, and are not dependent on the payment of interest from the earnings of the municipal plant, and the bonds issued by a municipal plant are tax free. These are some of the reasons why a comparison of municipal rates with commercial rates would be of no avail.

THESE articles are not a defense of the power companies nor are they written in their interest. There have undoubtedly been abuses in the electric light and power industry, just as has been the case with the railroads and other great utilities. Regulation of accounting and the white light of publicity will furnish the facts which enable us to kill abuses without delay.

My own years of experience on municipal undertakings and my contact with public utility problems have led to certain very definite conclusions.

Any kind of public service that could be rendered by a governmental agency but which is turned over to a privately owned company to render, should be under strict and uniform regulation as to accounting and the form and publicity of statistics. Exactly the same regulation of accounting and statistics, and the same publicity, should control the governmental agencies even if the commissions are not given the same control over rates

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TABLE 14

Residential sales	1,538,633 kw. hr. @ 6.36¢	\$97,854
Commercial and power	590,385 kw. hr. @ 3.87¢	22,837
Total sales to customers	2,129,018 kw. hr. @ 5.67¢	\$120,691
Street lighting, water pumping, and municipal uses	2,013,645 kw. hr. Free	000
Total operating revenue		\$120,691
Revenue per kw. hr. sold and used, 2.91 per kw. hr.		

and service that they do or should have in the case of commercial companies.

IN other words taxpayers and patrons of the utility are entitled to know all of the facts regarding the publicly owned utility, and the engineers and accountants employed by any community should have available complete information as to results of operation of such plants in all other cities of comparable size and conditions.

Regulation of financing, operation, service, and rates should in general be in the hands of state commissions which are better advised as to all local conditions which control or affect the operation of the property than any Federal agency can possibly be. The Federal Commission has its proper function in dealing with interstate corporations and transactions and as a fact finding body with powers which will permit the securing of uniformity in accounts and statistics.

Private utilities should recognize—and I think that the majority do rec-

ognize—that the only reason they are allowed to exist is to give *service* at rates that are reasonable. The allowance of a return on money invested, sufficient to induce capital to engage in this form of public service, does not justify financial racketeering.

I AM convinced that much better results can be obtained from operating organizations which are responsible to a competent private management and boards of direction which must show economical operation, adequate upkeep, good public relations, and a profit than can possibly be secured from a national bureaucratic or a local political organization which is responsible to a constantly changing, short-lived political administration without any financial responsibility as to the result.

I am therefore not in favor of public ownership of such a highly complex utility as the one we are discussing unless it be under control of a continuing nonpolitical and competent board wise enough to secure competent and skilled management, and only

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in cities large enough to insure sufficient business and sufficient earnings to justify the construction of a thoroughly high-class plant with adequate duplicating facilities, and to provide ample revenue for maintenance and provisions for retirement.

I am aware of the fact that there has been a continued and persistent urging of municipal ownership of various utilities on communities of all sizes all over the United States by certain groups of interests.

Whether those interests be purely selfish, seeking the sale of personal services, or socialistic, seeking to abolish private ownership of all forms of public service agencies, is of not much moment so long as exact facts are presented.

WHEN the campaign for extension of public ownership is based upon propaganda which depends on untrue statements and distorted facts then it becomes a form of racketeering

which can only be suppressed by a full and honest finding of all of the true facts by an authoritative governmental agency whose statements can be accepted as final.

The time for such a study and report has arrived.

PWA release No. 989, September 27, 1934, states the basic policy of the Federal government to be:

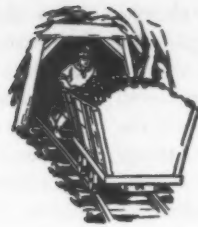
to make electric energy more broadly available at cheaper rates by acting on loans and grants to finance municipal systems where reasonable security is offered and the project is socially desirable. *They are deemed desirable where a loan can be amortized in a reasonable period while charging rates substantially lower than those of the existing utility.*

My own studies lead me to question whether, if adequate studies had been made in each case, and if the government had the facts as to now existing electric plants, any of the plants in cities of 15,000 or less which have received allotments, would have been found to qualify under the above specification.



Wouldn't Don Quixote Have a Fine Time?

HARNESSING of the vast power of polar blizzards was proposed by Professor F. Debenham of Cambridge University during an address at the recent British association conference in Glasgow, Scotland. He would have a ring of giant windmills encircling the Antarctic to catch the power, which could be conveyed by wireless to the southern hemisphere.



The Conservation Movement in Relation to Public Ownership

Need for Comprehensive Coördinated Program

IN the opinion of the author the one great, all-important, and imperative problem of our nation and of any present civilization, if it is to survive and prosper, is how to conserve and utilize our natural resources of land and water, coal, gas, and other minerals—how to arrest soil erosion and soil depletion—how to restore and maintain the forest and timber lands, restock our rivers and game preserves, restore and maintain “the balance which nature has set up” for the production of our natural resources which are the very basis of both the individual and collective existence of our people.

By CARL D. THOMPSON

AMONG the ruins of Casa Grande in southern Arizona are the mute remains of two civilizations that have preceded ours. Here two hundred years ago, and perhaps two thousand, lived and toiled people who built irrigation systems, dwellings, and cities; who tilled the fields, exploited the soil, built up their civilizations, warred upon the elements and upon each other, and finally lost in the struggle and are gone and forgotten.

And now upon the ruins of these two civilizations we are trying to build another. Shall we succeed better than they?

In the sands that have buried the ancient cities of Tyre and Nineveh we may if we will learn some lessons in

the need of conservation. Or in the sands that in the valley of the Nile have “drifted into old irrigation ditches and the sites of opulent gardens”;¹ and again in the drear desolation of parts of India and China we may find these lessons reiterated.

“As matters now stand,” says Morris L. Cooke, “and with continuance of the manner in which the soil, the mainstay of individual and collective life, is now being squandered, *this country of ours has left to it less than one hundred years of virile national existence . . . and probably less than twenty years in which to build up the techniques to recruit the personnel*

¹Report of the Mississippi Valley Committee of the Public Works Administration, Washington, D. C., October 1, 1934.

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and—most difficult of all—to change the attitude of millions of people who hold that ownership of land carries with it the right to mistreat and even to destroy their land regardless of the effect on the total national estate . . . At the present² rate of destruction only 150 million acres of really fertile land will remain in this country in fifty years. This is the only acreage sufficiently level to resist erosion without some control work."

THUS America comes to grips with the forces of that "ruthless exploitation" that has ruined other civilizations and threatens now to ruin ours. "Only fragments remain of the great pine and hardwood forests of the eastern and central states," says Mr. Cooke, "and we are rapidly draining the reserves of the West. Over 75 per cent of our saw timber and over 50 per cent of many of our minerals, including oil, copper, zinc, and lead, are gone. The furs, fish, and game have disappeared from large areas. Of even graver import, the very land itself is rapidly going! It is being washed into the rivers and oceans and being blown away, forever out of reach and out of use."

One who has lived as the writer has, in northern and western Nebraska and witnessed the futile and pathetic struggle of eager and hopeful settlers to wrest a living from the soil that often actually blew away once it was plowed; or has witnessed the gradual soil depletion in the great Red river valley of Minnesota and North Dakota; the drying and wasting away of rivers and innumerable lovely little

lakes that once dotted the landscape in northern and western North Dakota—and even of a body of water as large as Devils Lake in that state; seen the devastating effects of soil erosion and soil depletion in the Tennessee valley and throughout the southern states; the steady year after year falling of the water level in the great Central valley of California or the mile upon mile of abandoned farms in central and northern Washington—can well understand and fully appreciate what these warning words of the engineers and the soil erosion specialists mean to America.

TURNING to the question of the exploitation of the oil, mineral, and gas resources of the continent, Secretary of the Interior Harold L. Ickes has recently given a most pessimistic picture of the tragic waste now going on in the commercial exploitation of oil and natural gas—a picture that should challenge the serious consideration of every thoughtful citizen. He tells us that at the present rate of exploitation, the known resources of cheap oil supply are sufficient only for ten or fifteen years. Enough natural gas is wasted (literally wasted—blown off into the air) in the state of Texas every ten minutes to meet the gas needs of the average gas consumer for a hundred years.³

The conservation of the water resources of the continent is perhaps the most vital of all. Domestic service which in the large cities is enormous, fire protection, irrigation, navigation, flood control, and hydroelectric power are all involved.

² From, "An Engineer Looks at Rural America," in *The Journal of Land & Utility Economics*, February, 1936.

³ *Saturday Evening Post*, February 2, 1935; "Texas Awakes to Wanton Gas Waste," *Texas Weekly Magazine*, December 15, 1934.

THE CONSERVATION MOVEMENT AND PUBLIC OWNERSHIP

Besides being the most important element in the industrial, agricultural, and domestic life of the nation, and therefore the key to oncoming civilization, its use conserves the fuel resources of coal, oil, and gas. These latter, once they are burned and used, are gone forever, whereas the water power can be used many times on its way to the sea and even then is brought back in the mists and spray of the clouds to the mountains to flow again and thus again forever. The conservation and utilization of our water resources are therefore of extreme importance.

ON the other hand, there has been a tendency of late in some quarters to overestimate the importance of hydroelectric power or at least to overlook the fact that coal and other fuels are still the greater and therefore more important source of electric power and are likely to be increasingly so for many decades to come. Even now only 40 per cent of the electric power developed in this country is from water power while 60 per cent is from coal. But with the increasing efficiency and economy of the steam turbine and other refinements of steam production, and especially with the utilization of the major water-power sources and the enormous increase in the use of electric power, coal and other fuels are certain to be in increas-

ing demand from now on for a long time.

The National Power Survey made by the Federal Power Commission in 1935 pointed out that "By far the greater part of all electric energy generated in the United States is produced in fuel burning plants."⁴ It is further stated that in many sections of the country, especially the Northeast and Middle West, "it is probable that a large percentage of the power requirements will always be developed by other means than water power."

The late Charles Steinmetz once said that if "every drop of rain which falls in the United States were collected and its power used for heating, the total amount of heat produced would be only about one third as much as that given by our present coal consumption."⁵

From all of which it is apparent that we shall need all the coal and fuel resources in addition to water power in the development of electricity for the future needs of our civilization.

THE fear that the present program of the Federal government in developing great hydroelectric projects would ruin the coal industry of the country is therefore without founda-

⁴ National Power Survey, Interim Report, Series No. 1, page 40, United States Government Printing Office, Washington, D. C.

⁵ "Electricity and Civilization," *Harpers' Magazine*, January, 1927, pp. 227-232.



"... there has been a tendency of late in some quarters to overestimate the importance of hydroelectric power or at least to overlook the fact that coal and other fuels are still the greater and therefore more important source of electric power and are likely to be increasingly so for many decades to come."

tion. The miners, the mine owners, and the railroads that ship the coal have been needlessly alarmed over this matter. On the other hand, it has seemed to us that the present administration has needlessly exposed itself to criticism and has overlooked a very important possibility of strengthening its power program. If in addition to a conservation program in the water-power field, it had developed a conservation program for the utilization of the natural resources of coal, oil, and gas in sections of the country where those resources prevail for the production of electric power; or at least had coördinated the use of steam power with water power, they would have been in a much stronger and more logical position.

We brought this matter to the attention of members of Congress during its last session and Congressman Kent Keller of Illinois who represents a district where the chief industry and resource is coal introduced a bill in which the utilization of coal would be recognized in the development of a power program in the section where coal and fuel are the major factors.⁶

HERE, then, is the one great, all-important, and imperative problem of our nation and of any present civilization if it is to survive and prosper:

⁶ "Coal Authority of the Middle Mississippi Valley Act of 1935,—a bill to improve the navigability and provide for the flood control of the middle Mississippi river; to provide for the reforestation and use of marginal lands and for the agricultural and industrial development of the middle Mississippi river basin; to provide for the conservation and utilization of the coal and other fuel resources, etc." (our italics), in the House of Representatives, August 23, 1935, 74th Congress, 1st Session, by Congressman Kent Keller of Illinois.

How to conserve and utilize our natural resources of land and water, coal, gas, and other minerals,—how to arrest soil erosion and soil depletion,—how to restore and maintain the forest and timber lands, restock our rivers and our game preserves, restore and maintain "the balance which nature has set up" for the protection of our natural resources which are the very basis of both the individual and collective existence of our people.

What is the answer to these imperative problems? Obviously, some much more fundamental and thorough-going conservation and utilization program than has heretofore been undertaken in this country.

It is not enough that we should conserve our natural resources. We must utilize them. Conservation without utilization is sterile. In fact, conservation on a sufficiently large scale to meet the present problems, is impossible without utilization.

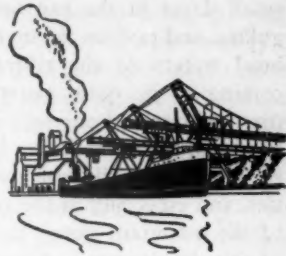
Water must not only be conserved so that it shall not waste away in devastating floods; it must irrigate the lands. And, above all, it must be turned into electric power and the sale of power be made to pay the cost of irrigation, flood control, and improved navigation.

THE soil must be conserved; wind and water erosion must in some way be halted. In so doing, agriculture can live and prosper. Unless it does, the nation cannot live and prosper. In a recent speech in Congress, Senator Norris well said:

Unless agriculture shall be revived, unless this most fundamental of all industries shall be placed upon a basis where free men and free women can earn a livelihood at it, in the end the result will be the destruction of the Republic; because, Mr. President, I

Conservation and Use of Resources

"IT is not enough that we should conserve our natural resources. We must utilize them. Conservation without utilization is sterile. . . . Water must not only be conserved so that it shall not waste away in devastating floods; it must irrigate the lands. And, above all, it must be turned into electric power and the sale of power be made to pay the cost of irrigation, flood control, and improved navigation."



hold that we cannot indefinitely continue even apparently to prosper as a Nation unless agriculture can be lifted from the depths of despair into which it has been plunged for various reasons, and because of various facts.⁷

To halt erosion and devastating floods, the forests must be rebuilt and maintained. Other countries, notably Sweden, have so utilized their reforestation as to make it a source of revenue to the state. The profit earned by the government forests in Sweden in 1928 was reported to be \$4,320,000.

If one looks at these problems in a broad way, the one outstanding fact that emerges is the necessity of coördinating the elements involved. Conservation must be coördinated with the utilization and developments that will make it adequate to solve the problems.

IN such great government projects as Muscle Shoals and Boulder dam, many compelling considerations enter. Flood control, and that upon a huge scale, comes first. When a whole val-

ley with great stretches of fertile irrigated fields reclaimed at enormous cost; prosperous cities and towns; a miniature civilization in itself is threatened with annihilation by flood, the effort to save it is no mere political makeshift. It is a stern, life and death necessity. One has but to ride for hours along the shores of the Salton sea formed by the overflow of the Colorado river in the disastrous floods of some years ago, or to fly in an airplane over the sea to catch glimpses of buildings still buried in its depths to realize the reality of the peril.

Or to study the still greater problems of the Mississippi valley where the "very land is dying; and where, measured by man's brief generations, it is losing forever its ability to produce food."⁸

But flood control cannot be achieved by the building of huge dams alone. Floods must be controlled at their sources. This involves reforestation and the rebuilding of "a surface soil capable of absorbing the water instead

⁷ "Legislation by the Judiciary," Speech of Hon. George W. Norris, of Nebraska, in the Senate of the United States, February 12, 1936, Part of *Congressional Record*.

⁸ Report of the Mississippi Valley Committee of the Public Works Administration, Washington, D. C., October 1, 1934.

of shedding it abruptly in floods during rainy seasons."⁹ And this in turn involves the building of a great many small dams in the canyons, arroyos, gullies, and ravines far up towards the head waters of the rivers. This is coming to be quite generally recognized of late and one sees in the small ponds and artificial lakes being created in many middle western communities, and especially in the arid districts of the mountain states, the beginning of this development. On some of the almost desert Indian reservations, the government is building innumerable small dams of this kind called charcos for this very purpose. And in the Tennessee valley, even smaller dams or check banks are used to arrest the soil erosion.

PRESERVING the top soil that has taken "nature 4,000 years per inch to produce" is quite as important as the building of huge dams further down the river. Both are essential. And the point we are emphasizing here is the necessity of coördinating all of these various lines of effort.

Thus the building of dams, whether little or big, all have their place and part in flood control and soil conservation. But they serve other purposes as well. The larger dams and reservoirs may also be utilized to improve navigation in some sections of the country and irrigation in others. Thus, two more elements enter. And, finally, there is the greatest of all possibilities,—that of hydroelectric development. This latter element becomes vitally important because it affords the one certain source of revenue

that will carry a very large part of, if not all, the cost of the combined development. It was the fact that the municipalities of southern California were able to sign valid contracts to pay for electric power from the government project at Boulder dam at rates that would ultimately pay the entire cost that was the final determining fact in putting the project through.¹⁰

Thus the success of any constructive program for flood control, soil conservation, navigation, irrigation, and electric power depends upon the coördination of all the problems involved.

OBVIOUSLY, such a nation-wide, coördinated conservation, and utilization program is too big, to say nothing of its far-reaching social and economic implications, for private enterprise. Any one of the great public projects like Boulder dam or Muscle Shoals or Grand Coulee is too big for private enterprise. Much more so is a comprehensive coördinated program involving the conservation and utilization of all the water and land, forest and mineral, transportation and utility resources of a great nation like ours. Only the united power and resources of all the cities, all the states, and all the people—the government itself, is adequate to this task.

Thus we are driven to a very extensive and far-reaching public ownership program, not by any theoretical or doctrinary consideration, but by the stern and stark realities of economic necessity.

Public ownership made the great

⁹ "Little Waters, Marching Deserts, and Failing Fuel," PUBLIC UTILITIES FORTNIGHTLY, May 7, 1936, p. 621 ff.

¹⁰ "Confession of the Power Trust," by the author, Crowell Co., 1932, p. 528.

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Boulder dam project possible. It could not have been achieved otherwise. Not only the government, but seven sovereign states, were concerned and had to be united in an interstate compact or treaty before the project could proceed. It was public ownership on a large scale—very large.

Even then it would not have been possible but for another form of public ownership, also upon a large scale, *viz.*, municipal ownership.

MANY of the municipalities of the so-called "coastal region of southern California own their electric light and power systems. Los Angeles is the largest of these. In fact, that city owns the largest municipal light and power system in the continent. Pasadena is another of the larger cities in the section that owns its power system. Some of the cities own only their distributing systems.

By their successful ownership and operation for long periods of years of these municipal systems, these cities have acquired the financial resources and the mechanical means that made it possible for them to contract for the power at Boulder dam on terms that would reimburse the Federal government for the entire expenditure during the period for which the bonds were issued.

Twelve great cities in this same section are now coöperating in the financing and building of a \$220,000,000 aqueduct to bring the water of the Colorado river conserved by the Boulder dam project over several ranges of mountains into the coastal region. Another huge coöperative municipal ownership feature depending upon and contributing to the major public project.

The devastating floods of the Colorado river, the saving and protection of the Imperial valley, the irrigation and domestic water supply for the entire Coastal Region—all these would not have been possible and could not have been achieved except for municipal and public ownership upon a very large scale.

THESE same economic necessities are back of the great Tennessee valley experiment. They are back of other similar projects at Grand Coulee, Bonneville, Ft. Peck, Casper, Alcona, Southerland, Columbus, the Mississippi valley, etc. A broad view and full understanding of the nation's problems of relief, of recovery, of unemployment, of the restoration of agriculture, of soil erosion and depletion, of reforestation, of conservation of all of our natural resources, of flood control, irrigation, navigation,



"PUBLIC ownership made the great Boulder dam project possible. It could not have been achieved otherwise. Not only the government, but seven sovereign states, were concerned and had to be united in an interstate compact or treaty before the project could proceed. It was public ownership on a large scale—very large. Even then it would not have been possible but for another form of public ownership, also upon a large scale, *viz.*, municipal ownership."

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and electric power will envision all these great movements as essential parts of a comprehensive national program, each one related and necessary to all the others.

Naturally and inevitably this whole program has been challenged in the courts on the question of constitutionality. It is vigorously contended that much of this program is beyond the constitutional rights of the Federal government. It is held by those who are opposing municipal and public ownership and the Federal Power program in respect to such projects as the Tennessee valley and its subsidiary projects that there is no authority in the Constitution for such action. Accordingly, they have brought suit in opposition not only in the local but in the Federal courts.

The extent to which this opposition has risen is astonishing. According to a recent investigation made by the Federal Power Commission in response to a Senate resolution, it is shown that 278 petitions have been filed against 195 public authorities in 35 states of the Union "interfering with these public projects by restraining orders or injunctions."¹¹

THE Tennessee Valley Authority has similarly encountered legal objection in three different areas in which it has been endeavoring to make contracts with 18 different municipalities in northern Alabama for the sale of electric current from its project at Muscle Shoals.

From this it will appear that the

question of constitutionality, which is the one that is most generally involved in the legal proceedings against the municipal and public projects, has become a very serious problem. Naturally the question arises "Should not this matter be cleared up by some form of constitutional amendment?"

We have always felt that this general program, if properly handled, could be carried out under the present provisions of the Constitution. The recent decision of the United States Supreme Court in the Ashwander Case in the TVA matter has at least partly settled the question. The court really sustained the major contention of the government on the constitutional question and clearly reaffirmed the controlling constitutional principle that the Federal government may exercise an effective authority over the power operations that result as a by-product of navigation, flood control, and national defense.

THAT would seem to settle the matter with regard to the major problems of the TVA. But it leaves unsettled and indeed untouched the question of the constitutionality of many phases of the TVA program not directly involved in the validity of the contract between the TVA and the Alabama Power Company. The question of the other dams of which there are four under construction and more contemplated; the matter of model towns; of conservation of soil; the manufacture of fertilizer; of reforestation; of the removal of settlers to more fertile lands and other features of the TVA program are not decided. As the struggle over these matters becomes more acute, the ques-

¹¹ "Restraining Orders and Injunctions Instituted against Electric Projects," United States Senate Document, No. 182, 74th Congress, Second Session, February 24, 1936, United States Government Printing Office, Washington, D. C.

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tion of constitutionality becomes more pressing.

In an article recently published in the *Georgetown Law Journal*,¹⁸ there is urged the importance of a constitutional amendment. It is stated:

Surely the framers of the Constitution never intended that historic document to stand in the way of our remedying the depletion of national resources. It is up to Congress, in the opinion of this writer, to tackle the question honestly and completely by proposing to the states an amendment to the Constitution that would give to the Federal government adequate powers to conserve the land as well as the natural resources.

The legal writer follows up this statement with an interesting suggestion for study and discussion in the tentative form of a constitutional amendment:

Congress shall have the power to protect, conserve, and regulate the exploitation of all natural resources inherent in all lands and waters of the United States and territory subject to the jurisdiction thereof. In the exercise of such power the Federal government may acquire, regulate, operate, or dispose of lands, waters, and other properties and property rights in whatever manner may be necessary for the carrying out of the purpose of this amendment.

OF course a number of other proposals have been made and in some cases resolutions have been in-

¹⁸ "Constitutionality of the TVA Project," by F. X. Welch, *Georgetown Law Journal*, March, 1935, p. 389.

troduced in Congress proposing constitutional amendments.

The objection to this procedure is the great difficulty in securing a constitutional amendment under existing conditions. Senator Norris has pointed out the difficult and impractical method of meeting these problems by way of amending the Constitution because it takes so long to accomplish it.

The necessity of immediate action if the program of recovery, conservation, etc., is to be effective makes it more or less impractical to wait for the slow and long process of constitutional amendment. Millions of people are out of work, farmers are losing their farms, and workers their homes, and many are facing privation and want and even starvation. Something must be done quickly. Neither the individual nor the government can wait too long.

In view of these conditions, the government and municipal agencies are no doubt justified in trying to get forward with their program without waiting for constitutional amendments.

On the other hand, the desirability of having the matter cleared up is obvious. Probably both methods will need to be followed.

The Verdict of History?

"I VENTURE to say that no industry in the world's history has contributed any more completely to the economic good and the actual physical comfort and well-being of all classes of mankind than the power industry. The future great historian of this era in America—a possible Gibbons, writing with meticulous attention to facts when the heat of political controversy is cold and the last TVA and yardstick plant has wrought its good or evil, this future Gibbons will give to our industry credit for having done one of the outstanding jobs of our time."

—FLOYD L. CARLISLE,

Chairman of the Board, Consolidated Gas Company of New York, and Niagara Hudson Power Corporation.



The New Deal Power Program

A policy of construction, subsidy, and attack on private industry

IN this article the author gives the background of the present movement to socialize the electrical industry and discusses the three phases of the New Deal power program which in his opinion is designed to destroy the business of the privately owned plants.

By KENDALL K. HOYT

THE government's billion dollar power program, backed by every resource of the New Deal, is a threefold enterprise. It is a program of construction, of subsidy, and of attack upon private industry. All three phases are retarding the economic recovery of the nation. All three are pushing on toward socialization of electric power. All three, in violation of fundamental rules of common sense, of economics, and of the American system, are piling up public debt and a vast political problem for the years to come.

But let us lay aside these conclusions and plunge abruptly into the facts which are of public record. The story really begins long before the accession of President Roosevelt in 1933. Since early in the century, the advocates of public ownership have carried on persistent propaganda directed toward the ultimate control not only of power but of other great industries. Their earlier tactics were in sponsorship of municipal plants. This

movement failed because the efficiency of central-station service by private firms led year by year to the abandonment or absorption of isolated plants.

Then the "Liberal" group hit on the idea of establishing Federal "power authorities" which could be expanded into super-power systems, gradually choking out private ownership. For more than a decade, they were successful in blocking private development on the Tennessee river so that the Federal hydro plant at Muscle Shoals, built for war-time purposes, might stand as the nucleus of an experiment in public operation. Through this period, the long investigation of the Federal Trade Commission served to bring out all of the evils and none of the good works of private management of the power industry. The "Liberals" seized on the findings as grist for their propaganda mill, while the private companies chose a policy of silence.

When the New Deal swept into office, the "power trust" issue was tree-

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ripened and ready to fall into the laps of the politicians and the professors. So, in its threefold program, the New Deal was not an originator but merely took over, consciously or unconsciously, the plans so long fostered by the liberals and the radicals. Beginning with the Tennessee Valley Authority, which was set up in May, 1933, to carry forward a socialistic experiment based upon Muscle Shoals and other dams, the New Deal power program rapidly developed.

CONSTRUCTION, the main phase of the program, is going forward in a vast system of water-power developments, involving large dams scattered throughout the country. The ultimate cost of these works, if the New Deal plans are carried to completion, will exceed a billion dollars. The ultimate capacity in kilowatts of the large dams in the West for which allotments have been made will exceed the present installed capacity of all water-power plants west of the Mississippi. The ultimate kilowatt-hour output of the Tennessee valley development is reckoned in official reports as exceeding last year's output of the entire East-South-Central region.

New Dealers claim that there is a pending power shortage which justifies this program, because power production is now exceeding the previous high levels of 1929. But considerable plant expansion was undertaken in 1930 and 1931. Many existing plants can be expanded readily by the addition of new power units rather than by the much more costly method of building entire new plants. The industry never failed to keep up with the de-

mand, even during the 'twenties when, for years at a stretch, power output was compounding at 10 per cent annually.

Water power, moreover, has not gained much in efficiency in recent years while the production of power by steam, using coal, oil, or natural gas as fuels, has become increasingly efficient. The average consumption of coal (and equivalent of other fuels) in producing power for public use was 3.2 pounds per kilowatt hour in 1919 and only 1.46 in 1935, according to the U. S. Geological Survey. The more efficient plants are producing at one pound of coal per kilowatt hour. Many of the water-power sites, once desirable, are not worth developing under modern conditions because steam plants are far cheaper. The New Dealers seem unaware of this progress in technology and are still basing their plans on the blueprints which the liberals drew more than a decade ago.

THE water-power program is being financed largely through funds which Congress provided for "relief and recovery" and intrusted to the Public Works Administration and to allocation by the President. With these funds, the Bureau of Reclamation is working at Boulder dam on the Colorado river, Grand Coulee dam on the Columbia, and other large irrigation and power projects while the Army Engineers are building the Bonneville dam on the Columbia, the Fort Peck dam in Montana, and other navigation, flood control, and power projects.

Much of the New Deal work is under way despite adverse engineering

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reports. The most notorious case is the Passamaquoddy tidal power project in Maine against which even the New Deal Congress has revolted. Despite the absence of a market for the power, if developed, and despite warnings that the storage reservoir will not hold water, President Roosevelt recently has reiterated that he believes in the project and intends to see it through.

Even beyond all these, the Tennessee Valley Authority is the spearhead of the program because it embraces all phases tightly tied together in a limited area. The Federal properties, which TVA took over, cost approximately \$133,000,000. In addition, the New Deal has allotted \$152,000,000 and the full plan will lead to a total expenditure in the magnitude of \$600,000,000. Before dealing further with TVA, let us review the remaining two phases of the general program.

THE second phase, that of subsidies, is directed mainly toward the development of municipal plants. The Public Works Administration is the principal promoter through grants 30 to 45 per cent of the project cost and loans of the balance at 4 per cent interest. PWA electric power projects of a non-Federal character sum

up to \$76,000,000. But out of 93 allotments outstanding for electric projects in communities where power facilities were not publicly owned at the time of the grant, 56 are in litigation and court injunctions have been laid down in 36 cases. PWA has been the big brother of TVA in helping persuade Tennessee valley towns to build their own power systems in order to consume TVA current. The Works Progress Administration also has undertaken small electric projects.

Another form of subsidy has been given in the extension of rural electric lines, mainly through the Rural Electrification Administration. Twenty-year loans at 3 per cent are made to coöperative associations and others to finance the electrification of farms not now receiving central-station service. Although the costs are supposed to be repaid to the government, loans can be made up to 100 per cent of the cost of the projects and secured only by the lines built. Experience of private companies clearly shows that the government will bear many losses on this basis and, to the extent of these losses, will be a subsidizing agency. Up to July 10, 1936, according to a Treasury report, REA had spent and loaned \$1,570,097 of which 45 per cent had gone for administrative expenses. Projects approved thus far



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involve some 12,000 miles of line. A new REA bill which passed the recent session of Congress authorizes \$50,000,000 for the work during the current fiscal year and \$40,000,000 per year for nine years thereafter. TVA also has carried out a farm electrification program.

Government aid also has been extended in the electrical appliance field. The Electric Home and Farm Authority, formerly a TVA subsidiary, and the REA are authorized to aid in the financing of electrical appliances and, incidentally, plumbing equipment.

Now comes the third phase, that of attack upon private industry. While the New Deal was building up its own program through construction and subsidies on the one hand, it was working on the other to undermine the resistance of the power industry. The principal measure to this end was the Public Utility Holding Company Act of 1935, to lay a "death sentence" upon the major power groups; to make little systems of the big systems.

Prior to the holding company fight in Congress, the public ownership advocates within the government had formed a Federal power trust of their own, and a power lobby well organized to wage a vigorous campaign. A central board of strategy, known as the National Power Policy Committee, had been formed among the top executives of Federal units interested in power, such as the PWA, TVA, and REA. The Securities and Exchange Commission is represented. This body shares the administration of the Holding Company Act with the Federal Power Commission, whose

jurisdiction has been extended from water-power projects on navigable streams to include the interstate transmission of electric energy. The Power Commission has also been conducting a national power survey and an electric rate survey whose findings have added fuel to the propaganda.

In addition to this national power policy committee, several of the Federal executives have worked under an agency now known as the national resources committee. The set-up of this agency has included a Mississippi river committee and a water resources committee which delved into phases of the power problem and resurveyed many of the New Deal resurveys of the situation. So the directorate of the Federal power trust interlocked to the same degree charged against the "power trust" of private industry and its members had well prepared themselves for a united-front drive against private ownership.

THE great offensive toward the passage of the Holding Company Bill started with a timed barrage of propaganda from several of the cooperating agencies. Old "power trust" scandals were aired; new surveys were cited; and with fanfare the prefabricated draft of the bill (generally accredited to two young Federal attorneys) was placed in the legislative hopper. After the "death sentence" feature of the bill had passed the Senate by a margin of only one vote, the fight concentrated in the House where a strong majority at first revolted against the New Deal coercion. Then followed intensive lobbying activities by Federal officials. The findings of congressional investi-

TVA Subsidized Rates



"TVA is exempt from many items of taxation, financing charges, interest, and other costs which must be borne by private industry. This, with the arbitrary scaling down of rates, permitted the Authority to undersell private industry and left the taxpayers of the entire nation to make up the losses. With these subsidized rates TVA was in a position to attract customers among the municipalities and specially formed citizens' associations."

gations of private lobbying were shouted in the halls of Congress while New Deal lobbyists quietly went even to such extremes as using the Quoddy project as a threat to line up the vote of a Maine Congressman for the bill. The President sent insistent messages and before the final vote the Speaker of the House descended from the rostrum to plead for the bill of which he admitted he knew little. "And so the bill was passed."

Amendments extending the power of the Tennessee Valley Authority, the REA bill, and other power measures likewise were pushed through by the concerted action of New Deal power officials.

While the legislative and propaganda program against private ownership has gone forward, the less spectacular but equally important process of government competition with private business has burrowed from within. At present, Wilson dam at Muscle Shoals is the only government development capable of producing power in significant quantities. But within the next year or year and a half, the Norris and Wheeler dams of TVA, the Boulder, and the Bonneville projects

will be ready to deliver energy. TVA's efforts to market power will serve as a preview of what will happen elsewhere.

THE first step was to set up a rate schedule intended as a "yardstick" to measure the differences between public and private ownership; to beat down private rates by destructive competition rather than by the orderly fixing of charges on the basis of fair value by state regulatory bodies. TVA, exempt from state regulation, scaled down its rates by charging off large portions of the cost of development to national defense, navigation, and flood control. For the \$46,487,500 Wilson dam, TVA charged only \$19,529,000 to power while the Army Engineers who built the dam indicated a charge of \$37,000,000. Out of a total net investment in programs of \$48,487,528 through June 30, 1935, TVA charged only 6½ per cent to electricity. This sort of bookkeeping ran through the TVA accounts which were sharply criticized by the Comptroller General of the United States whose authority the TVA has sought to evade.

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TVA is exempt from many items of taxation, financing charges, interest, and other costs which must be borne by private industry. This, with the arbitrary scaling down of rates, permitted the Authority to undersell private industry and left the taxpayers of the entire nation to make up the losses. With these subsidized rates TVA was in a position to attract customers among the municipalities and specially formed citizens' associations. It built transmission lines to carry its power to these customers and, not content with the control of production and transmission, assumed authority over distribution by dictating the resale rates of its power. In seeking to wrest the Knoxville, Tennessee, market from a private power company, it threatened the construction of a duplicating municipal system through aid of PWA funds. The company entered contract to sell part of its system under this threat but was restrained by a stockholders' suit.

THAT, in brief, tells about the reliability of the yardstick and what was done with it. TVA has been considered by the President as merely the forerunner of other such instrumentalities of the new "National Power Economy." During the past session of Congress, hearings were held on a bill to create a Mississippi Valley Authority of the TVA type with jurisdiction over development in the whole vast Mississippi watershed. More active pressure by the President was placed behind a bill to provide for power sales from the Columbia basin project. This bill, which failed of enactment, would have broadened the power of the Army Engineers to con-

struct electric projects and of the Federal Power Commission to fix rates, like TVA, on virtually any basis it chose, except that even the "yardstick" pretense was abandoned in the recognition of "available markets, the interest of the ultimate consumers, and the general public welfare" as rate criteria.

Further competition with private companies is inevitable as the new power projects are completed and begin to reach out for markets. If used ruthlessly, as in the TVA area, this competition, backed by the entire United States Treasury, will gradually usurp the territory of the existing companies. If, on the other hand, the power is sold to the companies, a large displacement of coal and other fuels will result.

Present power sales by TVA to private companies mean that steam plants, which otherwise would be supplying the power, are idle. The resultant unemployment, in the coal mines and on the railroads which would have hauled the coal, is measurable in the hundreds of persons now; in the thousands when the sales of Federal energy are expanded. The oil and gas industries also will lose business in areas where these fuels are used for power generation.

THE constitutionality of the Federal power program is as yet undecided. One suit involving the sale of TVA power reached the Supreme Court. It was ruled that, inasmuch as Wilson dam was built under a constitutional war-time measure, the sale of its surplus power is permissible. But the legality of power sales from the new dams remains to be tested.

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Federal attorneys admitted to the court that if the major purpose is power production, the program is unconstitutional.

Earlier, TVA officials repeatedly stressed the power phases as dominant and the others as incidental. Now they stress navigation, flood control, and other features as constitutional pretexts. But the cost of navigation up a ladder of low dams, as proposed by the Army Engineers, would be only a small fraction of the present development through high dams. The requirements of flood control are to keep the reservoirs as nearly empty as possible in order to store floods when they come, while power operations require keeping the storage reservoirs as nearly full as possible. Annual flood damage in the area is a small fraction of one per cent of the cost of development. The national defense value of Muscle Shoals is largely mythical. TVA admits that it is no longer economical to produce nitrates by electric processes.

So these phases are mere pretexts. Similarly, in the Western projects, the reclamation feature is played up despite the dismal failure of past irrigation projects to repay their costs and despite the present efforts of the New Deal to reduce rather than to increase the acreage under cultivation. Incidentally, the silting of reservoirs, which fills them in a few decades and

also is destructive to wild life, is a further disadvantage of hydro-power development.

Similar doubts as to feasibility and legality surround the Holding Company Act and the municipal power program of the New Deal. Numerous court tests are in progress. It is too early to anticipate the outcome.

A MAJOR indictment of the entire program is that it aggravates the conditions it was intended to cure. The champions of public ownership point out that the financial practices of the utilities have brought heavy losses to investors. But the New Deal power program has caused further losses. The unfolding of the program has caused serious declines in the value of power securities, especially those of companies serving the TVA area.

The advocates of government ownership have charged that private rates are too high, although rates have been lowered year after year and are within the purview of state commissions rather than of the Federal government. Government competition, by increasing the risks and thus the financing costs of private companies, and by absorbing private markets, impairs the ability of power companies to cut rates and still make a fair profit. Production below cost, either by government or industry, may be of slight benefit to ratepayers in the areas



Q "THE vast power program of the New Deal sprawls across the path of recovery. Its threat to private initiative has depressed security values and has discouraged the utilities from their normal program of construction. The program casts a shadow over the already distressed coal industry. It stands as a warning to other industries."

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affected but the whole nation pays the bill directly or indirectly.

The New Dealers have charged also that the utilities have carried on extensive propaganda and lobbying, but this administration has used both on a scale before unheard of. They have charged that the power industry is in politics; that politicians yield to "power trust" pressure. It is a strange philosophy to say in one breath that politicians are corruptible and, in the next, that the remedy is to place the entire power system in their hands; to throw a ten-billion-dollar industry supplying nearly half the world's electric energy open to patronage jobs and pork-barrel projects.

THE insistence upon unsound projects wanted by local politicians already has revealed one of the principal dangers of public ownership. While jobs under the Federal power trust thus far have been relatively free from party patronage, the TVA requires by law, and other agencies by practice, that employees profess a belief in the "wisdom and feasibility" of the theories under which they work. This means that the Federal administration of power is guided inevitably by articles of faith rather than by facts; by ideals rather than by realities. Although the politician must come to the reformer for policies and technique, the reformer must go to the politician for money and authoriza-

tions. So the two work hand in hand—a strange alliance indeed.

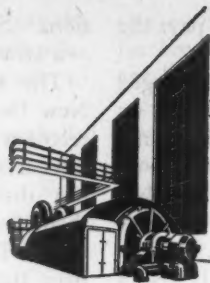
The vast power program of the New Deal sprawls across the path of recovery. Its threat to private initiative has depressed security values and has discouraged the utilities from their normal program of construction. The program casts a shadow over the already distressed coal industry. It stands as a warning to other industries which in time will be viewed rapaciously by the professional reformers and the politicians, after the power utilities have been brought to heel.

The New Dealers are prepared to cite evidence that the utilities have not been harmed, inasmuch as their earnings have returned to a high level. This merely reflects an aggressive sales policy in the face of adverse conditions. The New Deal cannot claim the credit nor has its program yet cut deeply into private markets. But it will, even with the plants now under way.

Even if the New Deal goes no further, the history of Muscle Shoals portends years of political controversy over these many large developments. And it is the expressed intent of the New Dealers that this program is only a beginning. Their "National Power Economy" by now has revealed itself and it can be characterized in these words, "That is not liberalism; it is degeneration."

Q "THE total available transportation facilities of America today could not be utilized efficiently and effectively even if we had a greater volume of traffic to handle than we had at the peak of the period which preceded the depression."

—L. W. BALDWIN,
Chief Executive Officer, Missouri Pacific Railroad.



The "Hydro" of Ontario

Notwithstanding the natural advantages it possesses, after an examination of its operating results, the conclusion is inescapable, in the opinion of the author, that private corporate enterprise in Canada, with all its handicaps, has far outstripped government enterprise in the utility business.

By WILLIAM H. ONKEN, Jr.

THE system of the Hydro-Electric Power Commission of Ontario is the finest example of state ownership of public utilities to be found on the continent of North America. None of the other provincial systems in Canada is comparable to it or even approaches the "Hydro" of Ontario in size, operating efficiency, or engineering merit. By common consent it o'ertops them all. The utilities of Quebec, however, by and large are corporate-owned, the government-owned utilities generating less than one half of one per cent of the total output of the province. In this connection it may be of interest to note that all of the government-owned projects in the United States combined, account for approximately 5 per cent of the total electrical output of the nation.

The Hydro-Electric Power Commission of Ontario enjoys a virtual

monopoly of the market for electrical energy in the province. The only other system of any importance in Ontario is that of the Canadian Niagara Power Company, and that can hardly be said to compete with the "Hydro." Thus the "Hydro" has been commendably vigilant and dexterous in the pursuit of its objectives.

Recognizing at the outset that the supply of electricity must be monopolistic if cheap power is to result, it either crushed or bought out competition. It covered Ontario with its network and brought electricity to towns, villages, and hamlets where none was available before. Rates for domestic service were slashed; and all in all, the use of electricity for any and every service was pushed to an extent hitherto undreamed of in the Land of the Maple Leaf. But before we succumb to the allurements of "Hydro's" imposing facade, let's peek inside.

THE "HYDRO" OF ONTARIO

The Hydro-Electric Power Commission of Ontario serves some 877 municipalities, towns, villages, etc., and all told has approximately 630,000 customers connected to its circuits. Its investment exceeds that of any commercial institution in the Province of Ontario and is the third largest in the entire Dominion; being surpassed only by that of the government-owned Canadian National Railways and of the corporate-owned Canadian Pacific Railway Company.

MORE than \$400,000,000 is invested in the "Hydro" and its affiliated municipal enterprises, and for the year ending October 31, 1935, the total revenue of the commission was \$30,901,500. All of its electricity is generated from water power, as is 98 per cent of the total electricity produced for sale in the Dominion of Canada. Thus power in Ontario and throughout Canada means hydroelectric power and since 88 per cent of the total hydraulic installation is located in electricity supply stations, it is evident that only a small percentage of the total power produced in the Dominion of Canada is developed independently and that most of it is purchased from public utility companies. This naturally follows owing to the almost total absence of any coal in the industrial provinces of Ontario and Quebec.

The public utilities of Canada therefore do not have to contend with competitive conditions in the power market like the utilities of other countries and this situation may well be borne in mind in any discussion of the power situation in Ontario. Moreover since more than 40 per cent of the total out-

put of the entire Dominion is sold at extremely low rates to the pulp and paper industry of Canada, almost all of which are located in Ontario and Quebec, the average rate must as a consequence be low. Therefore the per capita consumption may not connote very wide or very general use of electricity.

Time was when the Hydro-Electric Power Commission of Ontario was held up as an example of socialistic perfection. The structure that Sir Adam Beck reared is majestic in its proportions. He was regarded by many as divinely inspired, and so sacred was his handiwork that nothing could be taken from it, and to it nothing need be added.

HOWEVER magnificent his conception, it was none the less of the earth, earthy. Its foundations rested on clay; and those to whom his work was intrusted eventually became so intoxicated on the wine of triumph, that they no longer saw clearly the task before them. "*O quam cito transit gloria mundi.*"

In 1918, the "Hydro" sold a horsepower-year of electricity to the municipalities of Niagara Falls, Ont., and Toronto, for example, for \$9.90 and \$14.18 respectively. From that day forward, the rate has progressively mounted so that now it is more than double what it was then, notwithstanding that generating conditions remain the same and that the load has increased many fold.

Were this all that could be charged against "Hydro" management, it would be little indeed. But ambition like that which Wolsey charged Cromwell to fling away; because, as he ex-

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plained, "by that sin fell the angels" had quite vanquished "Hydro." Not for naught did the voters of Ontario in 1934 unseat the conservative government which created and which developed the "Hydro" enterprise. "Clean up Hydro" was the slogan which swept the liberals into power, and in obedience to that mandate, the lid has been lifted and heavy losses uncovered.

For decades the citizens of Ontario had implicit faith in the integrity and probity of "Hydro." They pointed to its achievements with pride and were loud in their praise of the management. Whatever might be said of other government enterprises in Canada, "Hydro" was lily white. With what a wrench then, did they discover that no longer could they lay any such flattering unction to their souls. The records disclosed that costs had advanced by almost 50 per cent in five years; that power was sold on an average at 14.26 per cent below cost to the municipalities; that energy was supplied directly by "Hydro" to industries at the maximum rates available; but that the gross returns did not equal the cost of the energy by almost \$6 a horsepower-year on a strict accounting basis. Was there ever such beating of bushes, without taking of birds?

It should be explained, that in the general "Hydro" set-up, the losses

in the final accounting are borne by the municipalities. Thus, had the commission charged the municipalities an amount sufficient to cover its losses on both company and municipal account, it would have been obliged to increase the rate to the municipalities by at least 20 per cent.

However, the commission tempered the wind to the shorn lambs. This is revealed by the cost per horsepower-year in 1935 together with the actual price charged to some of the larger municipalities, as follows:

PRICE CHARGED MUNICIPALITIES FOR
POWER IN 1935

Municipality	Cost per hp.-yr.	Amount charged
Toronto	\$31.00	\$26.43
Hamilton	29.51	24.94
London	31.39	26.82
St. Thomas	32.78	28.21
Kitchener	31.81	27.24

This is indeed a sorry showing; but "tell it not in Gath, publish it not in the streets of Askelon" the *pièce de résistance* is contributed by the pulp and paper mills of Ontario. Pulp and paper is Canada's predominant manufacturing industry, and it consumes approximately 40 per cent of the total public utility production of electricity of the Dominion.

Most of the electrical energy (upwards of 6,000,000,000 kilowatt hours) is used in electric boilers for the production of steam; Ontario being coalless.



"Not for naught did the voters of Ontario in 1934 unseat the conservative government which created and which developed the 'Hydro' enterprise. 'Clean up Hydro' was the slogan which swept the liberals into power, and in obedience to that mandate, the lid has been lifted and heavy losses uncovered."

THE "HYDRO" OF ONTARIO

Now mark how solicitous the "Hydro" is for the welfare of the pulp and paper industry of Ontario! Electricity which, before transmission, cost the commission \$15 a horsepower-year, was sold to the pulp and paper mills for as little as \$2.14 a horsepower-year; resulting in a loss of more than \$2,000,000 annually. Even as "dump" power, is not this piling Ossa on Pelion?

Should it be a matter of wonder, then, that in four years a deficit of \$12,500,000 was recorded without provision for contingencies and obsolescence, and with no sinking fund on the Chats Falls development, and on the hydro and steam property acquired in Hamilton? As a result, the obsolescence and contingency reserves of "Hydro," built up over a period of years and which in 1931 stood at \$14,631,725, have almost vanished. And lest some Thomas question the accuracy of these figures, let it be said that they have been taken from the official records of the Hydro-Electric Power Commission of Ontario, and revealed with manly frankness by Arthur W. Roebuck, Attorney-General of Ontario and a member of the Hydro-Electric Power Commission. Thus has "Hydro" plowed in sand and sowed against the wind.

It is easier to account for the losses than to condone them or some of the steps taken to eradicate them; but that is a matter resting entirely in the hands of the citizens of Ontario.

As is doubtless known, the Niagara system of the Hydro-Electric Power Commission of Ontario overshadows in size and importance all the other five divisions: Eastern On-

tario, Georgian Bay, Thunder Bay, Manitoulin, and Northern Ontario. Its chief source of supply is Niagara Falls, where the commission owns three hydroelectric generating stations,—“Queenston,” “Ontario,” and “Toronto,” aggregating 810,000 horsepower. The amount of water that may be diverted for power purposes at Niagara Falls is limited by International Treaty, and inasmuch as the full allotment is being used, the “Hydro” was compelled to seek elsewhere for additional power to meet its expanding needs.

There is abundant power in the St. Lawrence river abutting New York and Ontario; but until a treaty is negotiated which will permit the canalization of the international portion of the river and the development of power, the St. Lawrence river must be dismissed for the time being as a source of electricity for Ontario. On the other hand, the adjoining Province of Quebec has water enough for its needs and to spare. The “Hydro” therefore entered into contracts with four Quebec power companies for more than 800,000 horsepower at \$15 a horsepower-year. The oldest agreement is with the Gatineau Power Company for 260,000 horsepower with additions. More recent contracts were made with the Beauharnois Light, Heat & Power Company for 250,000 horsepower; with the Ottawa Valley Power Company for 96,000 horsepower, and with the Maclaren-Quebec Power Company for 125,000 horsepower.

PRESUMABLY the Hydro-Electric Power Commission found it cheaper to buy than to generate.



Promise of Self-liquidation

"THE 'Hydro' was originally intended to be a self-liquidating project, and it was accepted as such by the voters of Ontario. However, after almost thirty years of existence, the debt of 'Hydro' to the Province still stands in excess of \$187,000,000; and with all its reputed reserves, sinking fund, etc., the 'Hydro' is resorting to refinancing its maturing obligations."

Hardly had the last contracts been awarded however, when the whole world was gripped in a serious depression, and the load on the "Hydro" system dropped. For the year ending October 31, 1935, the "Hydro" was obligated to take from the four Quebec power companies 619,000 horsepower at a cost to it of \$7,936,892, and for which there was no ready market.

Confronted with increasing deficits on the one hand and with increasing obligations for more power from Quebec than it could possibly dispose of on the other, the commission obviously was in a dilemma. What was it to do? It had just recently been appointed to clean house and to restore confidence in the stability of "Hydro." It chose repudiation of the Quebec contracts as the easiest way out of its troubles. The commission was not concerned with the fate of the four Quebec power companies nor with the investments made in their stocks and

bonds. Let Taschereau and his Frenchmen roar, and let the money changers and swashbucklers of St. James street, Montreal, wring their hands in frenzy.

Who to himself is law, no law doth need.
Offends no law, and is a king indeed.

"Hydro" held the whip hand, and was resolved to use it. It concluded that the government (and "Hydro" is the government) must not fail; and having set its life upon that cast, it was content to stand the hazard of the die. The contracts were accordingly nullified; but not until everything was in readiness; otherwise Ottawa and most of Eastern Ontario would be plunged into darkness, and there would have been weeping and gnashing of teeth.

WITH two of the power companies, the "Hydro" subsequently concluded new contracts for lesser amounts of power and at a lesser rate, —\$12.50 a horsepower-year. While

THE "HYDRO" OF ONTARIO

these companies took Hobson's choice, the two other companies brought actions against the commission. It is questionable, however, whether under Canadian law they can obtain redress. Most of the argument in favor of cancellation was based on violent criticism of the former commission for ever having signed the contracts. The commission and the Provincial Government which directed it were also charged with short vision, unbusiness-like judgement, and with political favoritism.

However, if instead of buying power from the Quebec companies, the "Hydro" had built generating stations in Ontario capable of supplying the energy, it is obvious that the surplus would still plague the commission; but instead of being obligated to pay the Quebec power companies for it, the commission would be paying interest directly to bondholders in the Province of Ontario or elsewhere. Under such circumstances, is it thinkable that the commission would have repudiated the bonds issued to provide the power facilities?

But enough of soliloquy. What's past is strewn with husks, and perhaps also what's to come. "Can a man take fire into his bosom and not be burned? Can he touch pitch, and not be defiled?"

IN a previous article (Ontario's Golden Idol with Feet of Clay,—PUBLIC UTILITIES FORTNIGHTLY, June 6, 1935) the writer adverted to some of the blunders made by the commission's engineers, and to the fact that the commission at first bought energy from a corporate enterprise at a price which it cannot even

approach, much less match, in its magnificent Queenston station. There it obtains 30 horsepower from every cubic foot of water per second used from Niagara, compared with 17 horsepower obtained in the "Ontario" station from which it procured its energy at first. In that article was also shown the extent to which corporate enterprise in Quebec excelled "Hydro" in aggressiveness, economy of investment, and operating performance. Comparisons, however, while not altogether odious are seldom satisfying. They abound in details which clutter the argument and at times obscure the perspective.

A simple illustration, on the other hand, should suffice to enable the reader to comprehend the situation at Niagara Falls easily.

If nature provided one with a reservoir holding approximately one half of the fresh water of the world and at an elevation about half as high as the dam on the Colorado river at Boulder Canyon, and all at no expense, obviously the cost of producing power from the falling water would be very little. This is the situation enjoyed by the Hydro-Electric Power Commission of Ontario at Niagara Falls.

But if one has to pay taxes on property, on bonds, on water used, and on numerous other items, in all amounting to say 18 per cent of one's income; and if in addition one is obliged to supplement the electricity developed from the same river with almost as much electricity generated in a steam station burning coal; naturally, the cost of the electricity will be that much more. This is the condition on the American side of Niagara Falls.

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IF ever there was a place in the world ideally situated for producing electricity cheaply, that place is Niagara Falls, the site of the "Hydro's" major developments. No other sites in Canada are comparable to it and certainly none in the United States. And yet the record discloses that in poorer and less densely populated Quebec, average electric rates are lower; and that in near-by New York state possessing a different form of government, different standards of living, and different monetary, economic, social, and physical conditions, the average rate is also less than in Ontario. From so young, aggressive, resourceful, and virile a people as that living in Ontario, where nature has been most generous in water-power benefactions, this is not very flattering. Something should be done to remedy the situation and to offset recurring losses; for it cannot be that the "Hydro" will forever eat the bitter fruit of its own incapacity.

What are the prospects? Since its appointment the new commission has been very zealous on behalf of "Hydro." It has reduced the salaries of its executive officers and commissioners by \$134,607 a year and has made total reductions in salaries by reason of decreases and staff changes of \$208,028 a year. Its legal expenses were cut from \$114,632 in 1933 to \$56,262 in 1934 and to \$46,300 in

1935. Auditing fees, which in 1933 totaled \$51,292 were approximately \$15,000 in 1935. In 1933, insurance premiums cost \$152,240 and in 1935 they were \$65,055.

TRULY a saving of \$411,000 in the cost of operation is no mean accomplishment. But that is not all. Capital investment was increased by more than \$2,000,000 in 1935 compared with 1933, yet interest and exchange were reduced by \$560,000. Thus roughly, a million dollars a year has been saved in expense while revenue since 1933 has increased \$2,012,546. And yet notwithstanding this splendid showing, the "Hydro" was still losing money. Last year (1935) income was \$2,870,000 less than outgo, and without the savings enumerated it would have been in excess of \$4,000,000.

Certainly there was nothing encouraging to the new "Hydro" Commission in this. To all intents and purposes, it was saving at the spigot and wasting at the bung hole. "Hydro" was plainly and unmistakably sick. What it needed was a major operation, and this was no sooner realized than done; for out went the contracts with the Quebec power companies. Since then, the savings have been of the order of half a million dollars a month.



I*"It should be explained, that in the general 'Hydro' set-up, the losses in the final accounting are borne by the municipalities. Thus, had the commission charged the municipalities an amount sufficient to cover its losses on both company and municipal account, it would have been obliged to increase the rate to the municipalities by at least 20 per cent."*

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Under the old contracts the sum of \$7,936,892 for 619,000 horsepower was due the four Quebec power companies for the year ending October 31, 1935. In 1936, the same companies would have been paid \$9,517,500 for 706,000 horsepower at \$15 a horsepower-year. Under the new contracts 140,000 horsepower, with a reserve of 130,000 horsepower, is provided at a cost of \$3,236,810 including all charges under the old contracts from Oct. 31 to Dec. 6, 1935, when the former contracts were canceled. This results in a saving of \$6,280,689. For 1937 a saving of \$8,214,500 is indicated; while for 1938 and 1939 with increased loads, the anticipated savings will be \$7,720,000 and \$7,257,500 respectively. Thus for the four years 1936-1939, a reduction in the cost of power of \$29,472,689 is confidently expected. Besides all this, a saving will result from payments to the Gatineau Power Company in lawful money of Canada at Toronto instead of in New York funds. What this saving will be, may be judged from the fact that during the last five years, exchange has cost the commission \$945,838.82.

ON the technical side of "Hydro" some interesting observations obtrude. In order to supply Eastern Ontario from Niagara, a 60,000-horsepower frequency changer has been installed at Chats Falls to convert 25-cycle energy into 60-cycle energy. Every other system in Canada and in North America operates at the standard frequency of 60 cycles, except the Niagara district of the "Hydro" which stubbornly clings to 25 cycles for domestic service.

From the stations of the Gatineau Power Company to Toronto, the distance of transmission is 260 miles. Since the reduction in the supply of Quebec power and the partial substitution of Niagara power in Eastern Ontario, the line losses have been 26,000 horsepower less than they were under the former conditions. This is a saving in line losses alone of about \$300,000 a year.

Under the old arrangements, it was the intention of the former "Hydro" engineers to erect a new steel tower line from the Beauharnois terminal to the city of Toronto at a cost of from \$18,000,000 to \$20,000,000; but the present commission has no intention of entering into any such capital expenditure to make available in far away Toronto electricity, the logical market for which is in Montreal, 25 miles distant.

The commission at present has a single circuit line from the Quebec-Ontario boundary, where it meets with the Beauharnois line near the St. Lawrence river, to Toronto. This line extends for a distance of 75 miles till it forms a junction with the MacLaren lines at the mouth of the Lievre river and from there goes on to Chats Falls on the Ottawa river. From Chats Falls the power is then transmitted 200 miles to Toronto. The total distance is thus 301 miles and the maximum capacity of the line is 150,000 horsepower.

IT should be mentioned that unlike most power networks, the six systems of the "Hydro" are separate and distinct entities; and except for the recent tie-in of Eastern Ontario with Niagara Falls and the purchase of

Disappointing Results of State Ownership



"Now the facts about state ownership in Canada are these: While Provincial power authorities are quite common in the Dominion, the results of their operations are not such as to warrant emulation. Over-looking entirely the losses in taxes which result from such a policy, none of the power authorities has managed to meet expenses."

8,000 horsepower by the Georgian Bay System from the Niagara System, there is no interconnection whatsoever between the generating systems. All that they possess in common is a single executive office staff under one board of directors in the persons of three "Hydro" commissioners; and a unified financial responsibility.

Neither is there any system-wide rate for service. The rates vary with the distance and with the maximum demand of each municipality. In order to keep down peak load on which the yearly rate is predicated, the use of any motor, device, or heating apparatus which would add to the peak is oftentimes discouraged. If the municipality also owns a gas supply system, it is very apt to suggest the use of a gas stove instead of an electric range, for the sake of keeping down its peak demand. Certain it is, that the gas companies operating in Ontario have never experienced much, if any, competition from municipal electric systems. Where gas is available, the residence use of electricity is not very high. It is only where there is no gas available and where consequently electricity is employed for

cooking, water heating, and refrigeration, that much energy is used in the homes of Ontario. The total average annual consumption is approximately 1,600 kilowatt hours; yet 71 per cent of the domestic consumers use less than that average,—30 per cent using less than 600 kilowatt hours, and 30 per cent more consuming between 600 and 1,200 kilowatt hours yearly.

SINCE its inception the Hydro-Electric Power Commission of Ontario has received its funds very largely from the Provincial Government. Out of the \$259,000,000 put into the power business by "Hydro" some \$204,000,000 was raised by the sale of bonds of the Province of Ontario. Inasmuch as these were not earmarked in any way, it handicapped the Province in raising money for its own purposes. Therefore it was recently agreed to segregate the capital of the "Hydro" from the debt of the Province. In pursuance of this agreement, the Hydro-Electric Power Commission of Ontario henceforth will float its own bond issues, which however will bear the guaranty of the Province.

The "Hydro" was originally in-

THE "HYDRO" OF ONTARIO

tended to be a self-liquidating project, and it was accepted as such by the voters of Ontario. However, after almost thirty years of existence, the debt of "Hydro" to the Province still stands in excess of \$187,000,000; and with all its reputed reserves, sinking fund, etc., the "Hydro" is resorting to refinancing its maturing obligations. While in the present state of the money market this will result in some saving in interest, it nevertheless pushes that much farther away the day when the "Hydro" will be free and clear of debt.

On February 20, 1936, the commission sold \$15,000,000 of 5-year bonds at an interest cost of 2.58 per cent. In December 1934, it disposed of \$10,000,000 8-year bonds at an interest cost of 3.6 per cent. The present commission naturally is proud of this showing, which it mistakenly attributes to the better credit position of "Hydro," whereas in reality, it shows the faith of investors in the Province of Ontario which guaranteed the bonds. Without such a guaranty, "Hydro" bonds would, in all likelihood, not have been accepted at so low a rate of interest.

THE present commission is entitled to much credit for its hard work and for its unstinted loyalty to the "Hydro" ideal. It must, however, face facts and govern itself accordingly. Many perplexing problems will present themselves shortly, and the writer believes the present commission will meet the issues squarely and without fear of consequences. Ontario will not stand still. It will need more power, and the commission will have to provide it. What it has lately pro-

posed to do in Ontario in the way of development, may turn out to be a luring mirage. It may also discover that its new arrangement with the power companies of Quebec while it will stop losses for the moment has resulted in no peace;—just a truce, that may not last. The punishment it meted out was more ruthlessly unmoral than the crime, if contracting to sell power at a low rate may be considered a crime.

NOW the facts about state ownership in Canada are these: While provincial power authorities are quite common in the Dominion, the results of their operations are not such as to warrant emulation. Overlooking entirely the losses in taxes which result from such a policy, none of the power authorities has managed to meet expenses.

On the other hand, corporate enterprise in Canada, and that means chiefly Quebec, has to its credit the following accomplishments:

(1) *It is more aggressive in developing natural resources.* Compare the 3,000,000 horsepower developed on the lowhead rivers of Quebec, with the 2,000,000 horsepower developed in more populous Ontario; much of it at Niagara Falls, the counterpart of which does not exist in Quebec.¹

(2) *It is more efficient in the use of capital.* Observe the lesser investment and greater output per horsepower in Quebec with the investment and output in Ontario.

(3) *It disposes of electricity at a lower average rate.* Witness that the average rate per kilowatt hour con-

¹ For statistics on central electric stations in Canada, consult "Census of Industry, 1934" published by Minister of Trade and Commerce, Ottawa, 1936.

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sumed in Quebec is less than half that in Ontario.

(4) *It operates at less cost.* Compare the total expense of the power companies of Quebec with that of Ontario, together with the salaries, wages, etc., of both provinces.

(5) *It is more solicitous about continuity and reliability of service.* Evidence the interconnection of six separate systems in Quebec for mutual aid and protection with the lack of interconnection between systems in Ontario.

(6) *It has supplied every demand and spread its service over vast portions of rural sections at its own expense.* Witness the fewer number of farms electrified in the rich Province of Ontario, even with provincial subsidy, than in poorer and more sparsely settled Quebec where no subsidy exists.

(7) *It is more progressive in the matter of uniform rates.* Observe the system-wide rates for the same class of service in Quebec, with the variety of rates for the same class of service prevailing in Ontario.

(8) *It is keener to the advantages to the consumer of frequency standardization.* Witness the mixture of frequencies in Ontario,—an inferior 25-cycle lighting frequency in the Niagara District and 60 cycles throughout the rest of the Province,—with the uniform frequency of 60 cycles throughout Quebec.

(9) *It is more reliable in performance and more zealous in attracting industry.* Note the yearly rise in the wholesale cost of power in Ontario and the greater industrial growth in Quebec.

(10) *It renders service without reference to political expediency.* Observe that industrial and rural rates are lower in Quebec than in Ontario, and how "Hydro" serves large municipalities at less than cost.

(11) *It is not marked by arbitrariness or ruthlessness.* Study the unprecedented and dictatorial powers of "Hydro" and the ruthlessness with which it repudiated its contracts with Quebec power companies.

(12) *It is free from political preferment.* Note the shake-up in the "Hydro" staff and the complete change in the commission due to political upset at the polls.

But why pile up the evidence? "The moving finger writes, and having writ moves on." Considering the length of time the "Hydro" has been in operation, the advantages which it possesses, and the losses it has sustained, the conclusion is inescapable that private corporate enterprise in Canada with all its handicaps has nevertheless far outstripped government enterprise in the public utility business.

Relief Client Donates Municipal Plant

THERE is a new electric light plant being installed in the Dunn county (N. D.) courthouse—the gift of a relief client. The aged electric plant in the county building had worn out and county commissioners were contemplating the expense of replacement when J. F. Weinrich of Halliday, N. D., offered them his. Weinrich, whose plant had provided the city of Halliday with electricity until the franchise was given to another company, donated the equipment, valued at \$2,000. Weinrich is nearly eighty years old and had been receiving aid from the county for three or four years. He donated his plant as a gift in appreciation.

—The Bismarck Tribune.

Financial News and Comment

By OWEN ELY



Drought Effects on Utility Operations

DROUGHT effects on the electric light and power industry are indicated by the statistics in the August bulletin of the Edison Electric Institute. Kilowatt hours generated by fuel amounted to 5,573,337,000 in the month of June, compared with 4,173,597,000 last year, an increase of 33.5 per cent; while kilowatt hours generated by water power were 2,932,266,000 against 3,118,393,000, a decrease of 6 per cent from last year. For the twelve months ending May 31st the gain over the similar previous period was 12.9 per cent for fuel-generated kilowatt hours and there was also a gain of 10.4 per cent for hydroelectric output. Thus in June only 34 per cent of total energy was obtained from water power, while last year in that month some 43 per cent was thus obtained. Steam plants had to be used about one sixth more intensively than might have been done under normal conditions and since total output is around the all-time peak level this probably involved the use of many "stand-by" plants normally inactive, and of less efficiency. Thus the companies which normally produce hydroelectric power and are in the drought regions, will be affected for part of 1936 by additional fuel and operating costs.

D. W. Ellsworth, editor of the *Analyst*, thinks that the latest sharp rise in the *Times* electric-power index, to 105.8 (close to the 1929 high of 105.9) is due more largely to the drought than

to increased business activity. He points out that closing of hydroelectric plants has necessitated purchase of power from steam plants located at distant points, thus involving heavier transmission losses. Such losses are, of course, an additional expense factor.

Since very few companies issue monthly earnings statements, it will be difficult to trace the exact effects of the drought, particularly as there are so many abnormal earnings factors now at work—rate cuts, increased taxes, reduced interest charges, etc. One system which for many years has issued monthly earnings statements is the Commonwealth & Southern Corp., whose hydroelectric output in 1935 was 64 per cent of its total. However, it seems doubtful whether this company's hydro plants were greatly affected. In June the ratio of expenses and taxes to gross revenues was about 53 per cent, compared with 50 per cent last year, but it is possible that the higher ratio was due in part to increased taxes or other factors.

Electric Power & Light Corporation

ELECTRIC Power & Light Corporation, second largest of the four domestic systems affiliated with the Electric Bond & Share system, is a holding company with diversified services and territory. Its subsidiaries serve some 4,170,000 people in 1,318 communities located in twelve southern and western

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states—Arkansas, Louisiana, Mississippi, Alabama, Florida, Texas, Colorado, Utah, Idaho, Wyoming, Nevada, and Oregon—and in Monterrey, Mexico. In 1935, 49 per cent of revenues were obtained from electric power and light sales, 35 per cent from natural gas, 11 per cent from transportation, and 5 per cent from oil and miscellaneous.

Electric properties include two principal interconnected groups, one in Louisiana, Mississippi, and Arkansas, and the other in Idaho and Utah with extensions in the neighboring states. In the first group are included New Orleans Public Service, Inc., Louisiana Power & Light Co., Mississippi Power & Light Co., and Arkansas Power & Light Co. The western group comprises Utah Power & Light Co. and Power Securities Corporation, controlling Idaho Power Co. Companies not included in these two groups are the Dallas Power & Light Co. and Dallas Railway & Terminal Co., serving Texas communities.

The system's gas customers are serviced by subsidiaries of United Gas Corp.

Contributions made by subsidiaries to total system gross in the twelve months ended June 30, 1936, together with the percentage gains in net income registered over last year, were approximately as follows:

	Percent- age of System Gross	Percent- age Gain in Net 100%
United Gas Corporation	35%	
New Orleans Public Service	18	7
Utah Power & Light	12	95
Arkansas Power & Light	8	4
Louisiana Power & Light	7	44
Dallas Power & Light	6	2
Mississippi Power & Light	6	63
Idaho Power Co.	5	23
Dallas Railway & Terminal Co.	3	34

The above gains in net income of subsidiaries were reflected in consolidated system net income (after subsidiary preferred dividends) of \$5,351,245 compared with a loss of \$222,218 last year. Earnings for the current year were sufficient to cover dividend requirements

on the parent company's first preferred stocks with a slight margin.

ELECTRIC Power & Light Corporation owns substantially all of the common stocks (in addition to senior securities in some cases) of all its electric subsidiaries (the smallest percentage being the 90.9 per cent equity in Dallas Power & Light Co.). It owns substantially all the \$7 second preferred stock, 48.5 per cent of the common stock, and about 74 per cent of the option warrants, of United Gas Corporation. United Gas in turn owns substantially all the stocks of United Gas Public Service Co., its principal operating subsidiary, and of a number of other natural gas operating companies. It also has a 75 per cent interest in Duval Texas Sulphur Co., 47 per cent in Mississippi River Fuel Corporation, 27 per cent in El Paso Natural Gas Co., and about 49 per cent of the voting trust certificates for the Class B stock of Consolidated Gas Utilities Co.

Electric Power & Light Co.'s 9-year consolidated earnings record has been as follows:

Calendar Year	No. Times Charges Earned	Earned per Sh. Common.
1935	1.04	Def. \$1.40
1934	1.01	Def. 1.63
1933	0.92	Def. 2.32
1932	1.19	Def. 0.33
1931	1.42	1.21
1930	1.53	2.86
1929	1.70	2.98
1928	1.64	2.37
1927	1.63	2.09

Electric Power & Light Corporation has outstanding \$31,000,000 debentures due 2030, 514,172 shares of \$7 preferred stock, 255,431 shares of \$6 preferred, 82,964 shares of \$7 second preferred, 3,421,261 shares of common, and 567,354 option warrants. Current approximate quotations for these issues are as follows:

	Current Price	1936 Range
Debenture 5s of 2030	89	74-92
\$7 First preferred stock	72	33-85
\$6 Second preferred stock	70	30-78
Common stock	15	6-18
Warrants	6	2-9

Has Federal Activity Hastened Downtrend in Electric Rates?

THE average revenue per kilowatt hour from domestic customers in the twelve months ended June 30th was 4.86 cents compared with 5.20 cents in the preceding year, a decline of 6.5 per cent. It is interesting to note that some twenty years ago the average retail price of household electricity dropped 11 per cent during several years' period of rising commodity prices. While the downward trend was temporarily halted by post-war conditions, average rates have again declined quite steadily since 1921. It seems doubtful whether Federal intervention has accelerated the recent downward trend, which seems more largely due to the decline in operating cost, the adoption of new rate policies, and the orders of state commissions.

Injunction Asked against TVA Competition

SEVERE competition between TVA and private companies operating in Tennessee and neighboring states after November 4th (when arrangements for distribution of Norris dam power will probably be announced by TVA) now appears likely. Nineteen companies in this territory on May 29th challenged the constitutionality of the TVA Act, and on August 19th requested the U. S. district court at Knoxville, Tenn., for a preliminary injunction restraining the TVA from further activities, pending the outcome of the earlier action. The motion for an injunction stated that TVA has greatly increased its power activities and is proceeding to construct a competing network of transmission and distribution lines and "appropriating the customers and markets of these utilities and interfering with their present business relationships on the basis of unfair confiscatory rates made possible only by subsidies from Federal and state taxpayers."

TVA has already completed 2,100

miles of transmission lines, with 1,300 additional miles completed or planned. The territory served, or intended to be served, has a population of about 2,400,000. TVA now has, or is soliciting, contracts to serve twenty-two cities in Tennessee, eleven in Mississippi, seven in Alabama, and one in Georgia, and the electric power consumed by these cities is a large part of the total power business of the defendant companies.

As an example of "ruthless" TVA methods, Alabama Power Co. began to construct a line from Vinemont to West Point, Alabama, and less than an hour later one hundred TVA employees had begun construction of a competing line only a few feet away. On the same afternoon the TVA crews began stringing wires, which in some instances touched the tops of the Alabama Power Co.'s poles, and the line was completed the following day.

AN active campaign of propaganda and solicitation has been engaged in by TVA. It sponsors local committees which seek agreements from residents of their communities specifying what electrical equipment will be installed and used if a TVA distribution line is built. The committees are encouraged to organize coöperative electric membership corporations to finance service lines through REA or other government agencies. TVA rates are then fixed on a sliding-scale basis as an inducement to the membership corporations to solicit industrial and other large consumers now served by the utility companies, resale rates for power being definitely under TVA control. Thus far thirteen of these corporations have been formed in Tennessee, fourteen in Mississippi, six in Alabama, and one in Georgia.

TVA has also directly solicited large industrial and municipal customers of the private companies. For example, Monsanto Chemical Co. recently decided to construct a large plant in Tennessee and satisfactory terms for the use of a large amount of power were reached with Tennessee Electric Power

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Co., but the chemical company asked for proper security for the contract because of the precarious situation of the power company due to TVA. The power company offered to deposit \$1,500,000 of its own first-mortgage bonds, but in return the chemical company asked for a guaranty from Commonwealth & Southern, and shortly afterward announced that it had decided to purchase power from TVA, which has since commenced constructing a transmission line.

The motion for an injunction concludes:

By these processes, and as complainants' contracts with existing customers expire and noncompetitive and subsidized rates become established throughout the territory within the reach of defendants' power, complainants are immediately and inevitably faced not only with the loss of business in the territory so occupied, but with the complete and rapid destruction of their entire businesses.

THE *New York Tribune* points out:

In private industry no one can compete with an existing utility without a certificate of convenience and necessity from the state utility commission. The TVA has ignored the state commissions, and holds that it is not under their jurisdiction or supervision, and for this reason is free to compete with any utility. This is held as a good example of what a domineering government can do to private industry. The points against the TVA are piling up rapidly, and it is believed that the grounds for relief are so strong as to draw a broad interpretation of the constitutionality of the act from the Supreme Court.

While the Supreme Court has already rendered a decision which favored TVA, this was confined to a specific issue, and the opening of Norris dam, together with TVA's increased activities, affords good opportunity for a definite show-down on the whole question of yardstick rates based on sale of subsidized power.

Power from Bonneville

To what extent will Bonneville power, when available, compete with power supplied by private utilities? Ul-

timately about 2,500,000 kilowatt hours of salable energy will be available per annum, which amount is more than twice that generated in Oregon during the maximum year on record (despite the fact that present per capita use is already almost twice the U. S. average).

According to a study made by the advisory committee on power of the Oregon State Planning Board, the capital cost of generation will amount to \$46,000,000 and of transmission \$43,270,000. It is assumed that some 1,900 miles of line should be set up to serve 51 receiving substations (37 in Oregon). According to a summary of the report in the *Electrical World* of August 1st, probable future competitive power costs in the transmission area tributary to Bonneville might be as follows, including fixed charges:

Hydro	2.0 to 5.0 mills
Steam	4.5 to 7.0 mills
Diesel	7.0 to 12.0 mills

Electric Service to Farms

As of June 30th, the Edison Electric Institute reports that nearly one fifth of the nation's farms having occupied dwellings valued at over \$500 have electric service. While accurate comparison with the previous year is difficult because of a reclassification of farm customers, it appears that there was a net gain of about 70,000 farm customers, or over 9 per cent, during the year.

According to an address before the Institute by Vice President Freeman of the Columbia Gas & Electric Corporation, Administrator Cook of the REA has proceeded slowly and cautiously in allotting Federal funds for farm electrification projects. Some months ago the amount actually advanced for construction work was estimated at only about a quarter of a million dollars, although applications for loans for rural electric-line construction totaled about \$93,000,000.

According to Mr. Freeman the sum

of \$40,000,000 a year, which is to be appropriated by Congress for lending of funds by REA, may be divided about equally between cost of wiring and appliances, and the cost of building lines; and at about \$1,000 per mile, some 20,000 miles of line could be built annually to service 75,000 customers. The REA assumes that these projects can be undertaken on a self-liquidating basis, even though consumers average less than four per mile. The electric industry, thus far, has found it impossible "to realize anything like the estimated results upon which the REA program is based."

Waldemar Kaempffert, in an article in the *New York Times*, "Power for the Abundant Life," estimates that "it will take at least 2,000,000 miles of additional rural lines to bring electric energy to territories that are now without it, and the investment entailed would amount to \$2,500,000,000." It is obvious that even if the REA steps up its program and expends 40 million dollars a year, extensions accomplished by this agency will be only a small part of the total program envisaged by Mr. Kaempffert.

Factors in Long-term Trend of Electric Power Output

THE *New York Times*, in revising its weekly index of electric-power production, points out that the long-term upward trend of electric-power output has again been resumed after a 2-year interruption due to the depression. This trend when corrected for seasonal variation appears to be almost identical with that of steel-ingot production, except that the cyclical amplitude is only one fifth that of steel, and hence the *Times'* trend line for its adjusted electric index has been derived by adjusting the steel index.

The *Times* points out that electric output is governed by several different factors: industrial use constitutes about one half, retail use by commercial consumers about one fifth, and electric railways about one tenth. Household use of electricity, which accounts for about

18 per cent, was affected only slightly by business conditions during the depression, and this decline was about offset by the increased use of current for electric refrigerators and other appliances. Domestic use of current is therefore a stabilizing factor, but it also introduces an extraneous influence on the index because its seasonal trend is quite different from that of commercial use of power. A more accurate index of business activity would exclude household use of current, but it is impossible to obtain figures on the separate classifications promptly enough to make them of any great value even for a monthly business index. Detailed consumption figures cannot be obtained until about six weeks after the end of the month to which they most closely apply, since they are based on readings of consumers' meters. The weekly figures compiled by the Edison Electric Institute represent total output of all utility plants (excluding traction companies) plus imports from Canada and Mexico. The monthly figures compiled by the Geological Survey include power produced by all generators but exclude imports.

Federal Control of Utility Accounting

THE Byllesby prize paper on "The Accounting Future in the Public Utility Industry," by H. G. Anderson, is published in the *Edison Electric Institute Bulletin* for August. Mr. Anderson points out that both the Federal Power Commission and the Securities & Exchange Commission are given practically unlimited power over the accounting practice of all electric companies subject to the act—estimated at about 90 per cent of all companies. This power also extends to individuals and companies owning as little as 5 per cent of the voting securities of, or doing the principal part of their business with, utility companies subject to the act.

Literally interpreted, the law would seem to prevent the utility accountant from keeping any records of any kind

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other than those prescribed by the commission, without obtaining its consent. The law would also seem to permit three "uniform systems of accounts," one by the SEC, one by the FPC, and one by a state commission, although § 318 might eliminate one of these three. It seems likely that the various authorities will coöperate toward the construction of a standard accounting system, and the meeting held in Washington last December was probably a step in this direction.

Mr. Anderson states that while in his opinion the law gives the commissions powers as to (1) "form and manner," (2) preservation of records, and (3) inspection of records, they do *not* give power to "write into accounting classifications new definitions not in accord with existing law as to 'cost' and 'profit and loss' and other vital factors having to do with the recordation of the financial history of the corporation. . . . At the present time two new accounting classifications, one Federal and one state, do contain such points and are being contested in the courts." The uniform system of accounts for electric utilities presented for adoption at the annual meeting of the National Association of Railroad and Utilities Commissioners last November contained in his opinion requirements which would force false theories of accounting on the companies. "These false accounting theories reflected in the published statements of the accounting company would in many cases affect its credit, render it difficult for the company to raise funds to meet the cost of expansion and development, and might ultimately lead to its insolvency through no fault of the management of the business."

THE proposed classification would fix property costs on the basis of the original cost of the property when first devoted to public use, regardless of any later changes in values. This adds a third rate base to the two previously used—"prudent investment" and "reproduction cost less depreciation"—the latter having been generally accepted

since the famous Supreme Court case of *Smyth v. Ames*.

The obvious intent of the classification as a device to reduce rates seems indicated by exclusion of certain items as operating expenses—debt service expense, financial-administration expense, and income taxes. These items have always heretofore been considered as proper deductions in arriving at the cost of rendering service.

The new classification would specify the straight-line method of depreciation despite the fact that obsolescence involves such irregular factors as improvement in the art, growth of the business, government requirements, etc. Depreciation of physical plant might perhaps be placed on a mathematical basis, but obsolescence can hardly be measured years in advance. In Mr. Anderson's opinion depreciation might well be divided into two separate reserves.

Another feature of the proposed classification is the requirement of elaborate and detailed records, both for capital costs and operating expenses, by "each separate generating station, substation, transformer station, and transmission line, and the distribution and utilization system in each city, village, or town." The great expense of keeping such records, which eventually must be paid by consumers, is obvious even to the uninitiated. The attempts of the Interstate Commerce Commission (and of the courts having jurisdiction in many passenger rate cases) with respect to attempted allocation of investment costs and operating expenses for various railroad services, geographical divisions of mileage, etc., should be studied in this connection.

The accounting committee of the Edison Electric Institute has previously submitted many suggestions to both the National Association of Commissioners and the Federal Power Commission, indicating the revisions which in its opinion should be made in the present classification, which was adopted by the National Association of Commissioners in 1922. It has now prepared a complete draft embodying its ideas.

What Others Think

Municipal Ownership, Public Sentiment, and Industrial Enterprise

SCARCELY a day passes now that the newspapers do not print another poll showing that Roosevelt will win, that Landon will win, that the election will be thrown into the House of Representatives, and so forth. Every class and every calling is being canvassed and interviewed by the professional previewers of American sentiment: farmers, business men, negroes, baseball stars, Holy Rollers, and chess players. Even little Shirley Temple, it is rumored, is finding it difficult to avoid the political interrogations of the straw vote promoters.

Just for a hot-weather change, it is interesting to note that the monthly magazine *Fortune* recently undertook to sound out public ownership of public utilities. The results of this survey, published last July, are as follows:

	For Public Ownership
Water	60.1%
Light	55.6%
Gas	54.8%
Telephone	50.0%
Trolleys and busses	49.2%

With about 14 per cent of the people answering "don't know" to each part of the question, these figures do appear to show a substantial popular partiality towards government ownership. The Washington correspondent for *Telephony*, the magazine organ of the independent telephone industry, had some interesting observations to make concerning the reliability of such figures:

Ask the average man on the street if the government should take over and operate anything that he uses often—street cars, milk, and bread, and even newspapers—and a surprising number will unthinkingly answer "Yes." There is somewhat of a grandiose and euphemistic tinge to the

phrase "operated by the government" that causes many an unthinking, or at least casual, observer to respond favorably.

Besides that, so many people of late have come to associate governmental operation with something for nothing that one can hardly blame "the Man on the Street" if the thought pops up in the back of his head that government operation may in some way mean free service, or at least a reduced rate for service.

THE *Telephony* article goes on to state that when a specific proposition is placed before local voters and the public ownership issue is "cussed and discussed" by opposing political groups, newspapers, and so forth, the reaction is different. In that event even the dullest citizen can grasp, at least in a general way, the meaning of public ownership and how it will affect him as a consumer and as a taxpayer. The article continued:

The results of the numerous municipal elections held within the past two years on public ownership of utility properties are surprising, in view of the fact that in nearly all cases the voters were assured: (1) that the government (Public Works Administration) would stake the town to from 30 to 45 per cent of the cost of the proposed utility plant, and (2) that the government would loan the balance. In some instances proponents unofficially assured citizens that even the loan need never be paid back unless the plant made money hand over fist.

Barring such elections in tiny whistle-stop communities of less than a thousand population, the results have heavily favored private ownership. Outside of the Tennessee valley area, Iowa City and Camden, N. J., are the only communities of consequence that have risen to the bait. Cities such as Milwaukee, St. Paul, Birmingham, and Cincinnati have overwhelmed such propositions.

The *Telephony* correspondent apparently is skeptical of results claimed by a recent release of the power division

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of the Public Works Administration which shows that of 132 communities in 32 states and Alaska, 112 communities or 82 per cent favor municipal ownership of electric power plants. This news release stated in part:

A breakdown of the results of the survey into population groups shows that 112 communities were under 10,000 population and that 85 of these were favorable to public ownership. In towns with populations varying from 10,000 to 24,999, 16 elections were held, 11 of which resulted in votes favorable to public ownership. In communities of 25,000 to 199,999 population, only seven communities are listed, yet five favored public ownership. Only two elections were held in cities from 200,000 to 599,999 population. One of these resulted in an unfavorable vote of approximately 56 per cent, while in the other city 94 per cent of the voters favored municipal ownership.

POSSIBLY the fact that the PWA survey was limited to municipal elections in which PWA loans were in issue (and hence did not take in such large city elections as Birmingham, Milwaukee, St. Paul, or Cincinnati) may explain the apparent discrepancy between the PWA conclusion and that of *Telephony's* correspondent.

Speaking of the PWA list of municipal electric results, a confidential "Washington letter" service, exclusively devoted to a discussion of utility matters, recently gave the results of 218 municipal elections on public ownership of electric utility properties held since PWA financing was inaugurated. It was stated that this survey included "every election of any consequence held within the period designated and that it presents a reliable picture of the prevailing trend in municipal utility elections, with due regard for the important factor of population." The results showed that on a total voting population basis, there was a substantial majority (70½ per cent) opposed to public ownership. On a municipal unit basis, however, there was almost an equal preponderance (63½ per cent) in favor of public ownership.

IN other words, out of the total of 218 elections, municipal ownership car-

ried in 138 places and was defeated in 78 places, but the municipalities voting favorably had only a total population of 1,460,821, as compared with 3,481,604—the total population of municipalities voting against municipal ownership. This would seem to indicate that municipal ownership is attracting strong support in smaller communities, while private ownership is the heavy favorite in the larger cities.

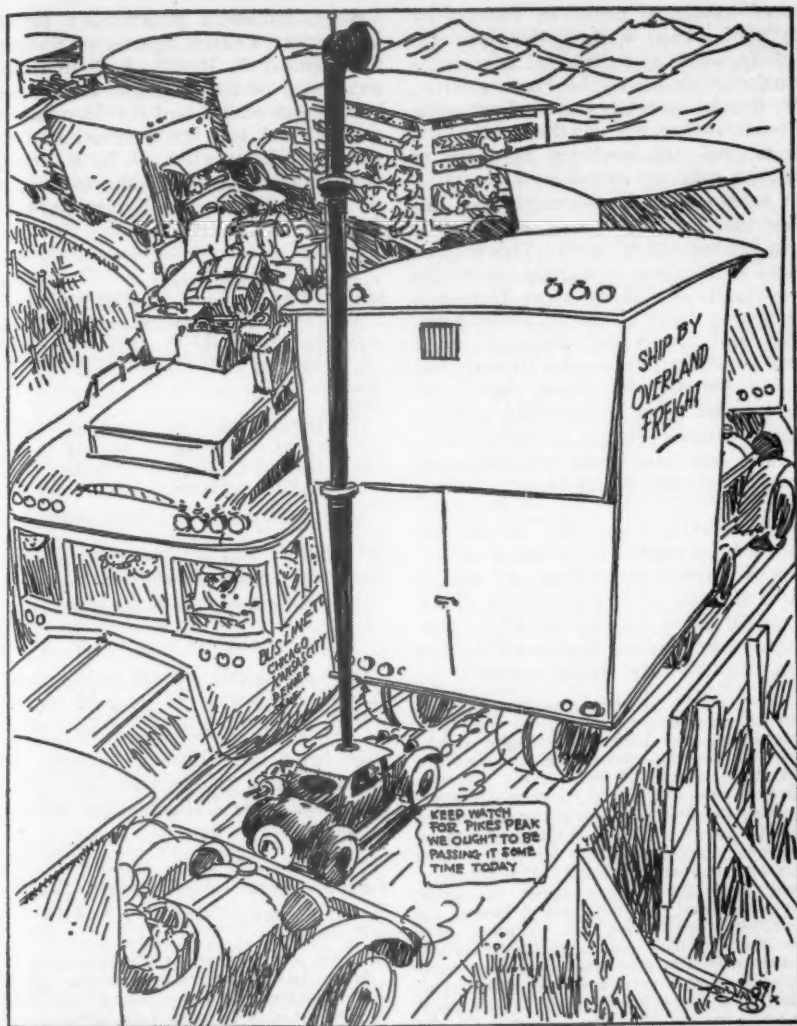
Of course, in connection with any survey of public ownership election results, care should be taken not to confuse general average public sentiment on public ownership with average results of public ownership elections. Elections are held only in cities and communities where the public ownership issue has been presented and agitated to the extent of bringing about sufficient popular demand for an election at all. Thus it is important to remember that the total population involved in all municipal elections listed since 1933 is less than 5,000,000, as compared with the vast balance of our national population served by privately owned electric utility companies.

On the other hand, as *Telephony's* correspondent observed, too much reliance cannot be placed on casual inquiries upon which polls or straw votes must be erected. He compared them to popular radio broadcasts in which the announcers place microphones on the sidewalks and asks various questions of passersby. The *Telephony* correspondent concluded:

In a single program, a radio announcer told this correspondent he had the following answers to his question: "Don't know how many states there are in the Union," "Don't know the name of the King of England," "A synonym is a kind of a soft bun," "Think that capital punishment should be abolished except when the person is guilty," "The government should relieve the drought by sending water in tank cars."

These boners (by people walking around the streets of Washington, D. C.) are here repeated, not as a sneer at the ignorance of the run-of-the-mill pedestrian, but merely to show that when you suddenly ask an average humble citizen something outside of his usual routine of experience, you are taking a decided advantage of him.

WHAT OTHERS THINK



St. Louis Globe-Democrat

THE NEXT ACCESSORY SHOULD BE PERISCOPES

And with all due respect to that esteemed publication, *Fortune*, when you walk up to the next man you meet on the street and ask his opinion about a complicated and important matter that he has perhaps never even considered before—such as whether the government should take over the telephone business—you need not expect any more in-

telligent answer than those on the radio program.

ANOTHER angle of municipal ownership of public utilities which has not received a great deal of attention was made the subject of a recent analy-

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sis of municipal plants in Indiana by the professional writer, Mr. Jonathan Brooks, who may be recalled as an occasional contributor to the FORTNIGHTLY. Mr. Brooks contends that in discussions of public ownership, whether local, state, or national, the tendency has been to consider only the question of obtaining low rates for small customers who (because there are more of them) have the most influence at the polls. This may be sound politics but is it good economics if it results in shooing away from this community large industries which make jobs and generally augment local wealth? That is the point investigated by Mr. Brooks. He claims that in order to meet costs of providing service, political control charges somewhat higher rates for commercial and industrial users of service, in addition to taxing them.

To prove his point, Mr. Brooks has made a brief study of municipal ownership of utilities in Indiana and alleges that a stunting of city growth is shown in nearly every community where municipal ownership of electric utilities has been adopted. Mr. Brooks states:

Here is the proof of the first item on growth. Indiana as a state has trebled in population since 1890 when, roughly speaking, the electric industry began. We have 34 cities over 10,000 population. Twenty-five of them are served by regulated companies, and these 25 have grown an average of 304 per cent. Nine of them, relying on politically managed plants for power, have grown an average of only 193 per cent, and 5 of the 9 have failed to double in population! Of the other 4 having the greatest growth, one has company service for industries and commerce in competition with the city plant, one has transmission system service for its greatest industry, and a third buys all its city plant supply from a regulated company in the larger neighboring city of which it is virtually a suburb.

As to industrial growth, Mr. Brooks takes Census figures to compare three cities, A, B, C, where municipal ownership of local electric service was being agitated but had not been accomplished, and four Indiana cities of the same population class, D, E, F, and G, where municipal ownership had become an accomplished fact. Here are his findings:

Company-served	Pop.	Manufactured goods	Wages	Wage Earners
A	14,027	\$8,675,000	\$3,118,000	3,387
B	12,795	8,745,000	3,467,000	2,648
C	13,420	5,800,000	2,100,000	1,455
Municipal				
D	18,508	4,800,000	1,310,000	1,110
E	12,195	3,200,000	842,000	978
F	12,730	1,396,000	613,000	582
G*	10,355	4,388,000	1,078,000	1,011

*(1931)—1933 data not available for this city.

Stated in simpler terms of employment, the results are as follows:

In A there is one job to every 4 persons	
B " " " " 5	
C " " " " 9	
In D (municipal) one job to 16 persons	
E " " " " 14	
F " " " " 22	
G " " " " 10	

In brief, Mr. Brooks contends that when political management of utilities came into these Indiana cities, industry wilted.

—E. S. B.

FORTUNE SURVEY. *Fortune*. July, 1936.

IN THE NATION'S CAPITAL. *Telephony*. July 25, 1936.

GROWTH AND INDUSTRIAL DEVELOPMENT FAR MORE IMPORTANT THAN ELECTRIC RATES. By Jonathan Brooks. Released by Public Service Co. of Indiana, July, 1936.

RESULTS OF MUNICIPAL ELECTIONS. PWA Release No. 1915. June 1, 1936.

Electric Power in the Northwest

CONSTITUTION or no Constitution, the Government of the United States is apparently in the power business in the Northwest, whether the excuse is

navigation with respect to the Columbia river or irrigation in the state of Washington.

Such is the conclusion of David

WHAT OTHERS THINK

Lawrence set forth in his syndicated newspaper column after a tour of Oregon and Washington. Although Mr. Lawrence found that there are some legitimate objectives of both navigation and irrigation at the Bonneville and Grand Coulee dams, he also discovered that the sale of the surplus power "has already become, not an incidental consideration, but a matter of threatened government competition with existing businesses."

On the other hand, it is insisted by J. D. Ross, superintendent of Seattle's municipal electric plant, that "no one need fear that these plants will be too large, or that they are in any way a menace to existing power systems, public or private."

At the same time, however, Mr. Ross points out that, in so far as Seattle is concerned, electric rates have now reached a point "where further large reductions depend on the elimination of the private company's competition and the heavy burden of expense for maintaining two complete systems to serve the same territory." Says Mr. Ross:

A great deal has been said about very cheaply generated power from the Federal plants; much less about the real problem of cheap distribution on which low rates to the consumer depend. Skagit (a Seattle hydroelectric development) will ultimately generate energy for less than one mill per kilowatt hour and is now producing energy for 3½ mills. The cost of delivering the same energy to the residence consumer's meter is 23½ mills, or approximately seven times the generating cost. If current were furnished free of charge at Coulee the cost to the customer in Seattle could be cut only two or three mills per kilowatt hour thereby.

The real hope for cheap energy in the home lies in the lowering of costs of distribution by elimination of all duplication and competitive expense, and the building up of the uses of electricity so that each customer will use vastly more energy than at present. In that way present residence rates can soon be cut in half.

Mr. Lawrence also found that private companies may be driven out of the utility business by government competition:

Seeing the handwriting on the wall, some of the private companies, rather than be-

come the football of politics, are planning, if the trend continues, to sell out their properties to the states or the Federal government or the power districts of the farm areas or the municipalities on a basis of salvaging whatever they can of their investment.

Mr. Lawrence agrees with Mr. Ross as to the effect of these Federal power plants on rates, but seems to think that more customers are necessary—not necessarily involving the elimination of private companies. The newspaper man states it this way:

As for effect on rates, the government projects might possibly reduce the generating cost by half a mill, according to engineering calculations, over the cost at which the private companies can do it. But that's merely generating cost. This saving, when spread out over all the users in a sparsely settled state like Oregon, becomes infinitesimal, especially when it is considered that the cost of transmission and distribution lines is just the same whether the Federal government or the municipalities or the power districts foot the bill.

The so-called cheap power will come when volume of consumption increases to such an extent as to enable the cost of distribution to be brought down correspondingly. There is no reason really why the government should not get electricity rates down lower than private companies if the projects are efficiently managed, if they are financed at low rates of interest through government aid, and if exemption from taxes is provided. But the fly in the ointment is the necessity for continued governmental subsidies until the users of electricity are sufficiently numerous to justify the removal of the subsidies.

The United States Bureau of Reclamation, which has charge of the Grand Coulee development, has no admitted misgivings as to markets for the huge amount of power to be developed there:

An important factor in the feasibility of this project as a whole is the market that may be available for the power that is to be produced at the Grand Coulee dam. The market area in which this power may be absorbed includes the area within a radius of 300 miles of the dam and includes all of the state of Washington, the northern part of Oregon, the northern part of Idaho, and the western part of Montana.

During the 10-year period ending with 1930, the requirements for power in the territory described as constituting the power market area increased at an average rate of

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9.5 per cent per year, compounded annually. The installed generating capacity of power plants serving the territory in 1930 amounted to 1,145,000 kilowatts and during that year there was generated 4,029,000,000 kilowatt hours by those plants. The effect of the depression was to suspend for about four years the normal growth of the power market. Production fell off after 1930 and reached a minimum in 1933, but during 1934 returned to the 1930 maximum and in 1935 resumed its former rate of increase, with the result that the production that year substantially exceeded all previous records. If we may judge the future by the past, there is every reason to believe that the rate of increase in power production for the 10-year period prior to 1930, amounting to 9.5 per cent compounded annually, will continue. But if we assume that the rate of increase starts off at but 8 per cent compounded annually and decreases uniformly to 4 per cent during the next thirty years, and if we assume further that Grand Coulee will absorb only one half of the increase after its completion, leaving the other half to Bonneville and other new developments, all of the Grand Coulee commercial power will be absorbed by the market in fifteen years.

MR. Ross seems to have a somewhat different idea. It should be noted that, as stated by the Bureau of Reclamation, the installed generating capacity of plants serving the territory in 1930 was 1,145,000 kilowatts. The Grand Coulee is projected to develop 800,000 kilowatts of firm power. The Seattle Skagit project is designed to produce 835,500 kilowatts. Mr. Ross thinks Skagit must first be served:

The Columbia river . . . is the next source of power to which the city and the whole state must turn when the Skagit and other sites now partially developed are fully utilized. Before that time comes all plants in the Northwest will be interconnected in a great superpower system. The Skagit, with its complete storage of run-off for power use, will be doubly valuable when operated in conjunction with Columbia river plants, whose capacity will be reduced at times of flood and in low water periods. Because of its granite foundations, higher heads, proximity to Puget Sound markets, total storage, lower development cost and other engineering and economic advantages no Columbia river plant can compete with Skagit until its capacity is all used.

The political temper of the people of the state of Washington has an impor-

tant bearing upon future markets for all this electric power, according to Mr. Lawrence:

But I can't see how industries are ever going to be attracted to the state of Washington to use the surplus power generated at Grand Coulee if the Democratic state platform of this year, which provides for "production for use" and a socialistic form of government, really represents the wishes of the people of Washington.

Nor can I understand how all the power is going to be used if its sale is restricted to municipal governments or districts. Clearly there must be some way by which the wonderful supply of water power can be used beneficially so that, on the one hand, it will not break down an existing business investment and, on the other hand, will give this region the benefit of cheap power.

MR. Lawrence thinks a sensible solution of the market problem can be found along somewhat the same principle as is now in effect at Boulder dam. It must be remembered, however, that the Boulder Dam Act specifically provided that contracts must be executed for the power to be produced at that site before any construction work should be done. The Columbia river project was started with no specific markets in sight.

"Private companies," says Mr. Lawrence, "could very well contract for future needs instead of building more power projects of their own. They ought to be able to buy their additional power from Grand Coulee."

But if the private companies are forced to sell, because of government competition or in the interest of lower rates, they will need no power. Then, presumably, the Northwest will dwell in the Utopia of public ownership and the fighting will all be between the Seattle municipal plant and the Federal plants.

—G. E. D.

SYNDICATED newspaper articles. By David Lawrence. August 21, 1936; August 24, 1936.

ANNUAL REPORT. Department of Lighting, City of Seattle. December 31, 1935.

GRAND COULEE DAM. U. S. Bureau of Reclamation. August, 1936.

WHAT OTHERS THINK

Help for the U. S. Supreme Court

Help Wanted: Precise, fool-proof formula for determining fair value of public utility property for rate-making purposes; must be constitutional. Apply to U. S. Supreme Court.

NO such advertisement has been authorized by the Supreme Court of the United States. In fact, it is possible—nay, it is probable—that the court does not feel the need of outside aid in passing upon recurring questions of public utility valuation.

Clyde L. Seavey has been closely identified with public utility regulation, including valuation work, for a long time. He was a member of the California Railroad Commission nearly a dozen years, and is now a member of the Federal Power Commission. He knows considerable about the subject.

It is Mr. Seavey's suggestion, made to the recent annual convention of the American Bar Association, that the Supreme Court needs some help. He does not like the way the court has been handling rate cases involving valuation, confiscation, etc. The state commissions likewise need help, thinks Mr. Seavey, so that any one of these regulatory agencies can avoid "the long, expensive, and circuitous route of having before it, and carefully weighing, all the elements the court has declared as proper for consideration in determining rates."

Mr. Seavey had previously told his audience about the Johnson Act, amending § 24 of the Judicial Code, which became a law in 1934. He thus explained it:

The Johnson Bill, amending § 24 of the Judicial Code, became a law on May 14, 1934. This enactment divested the lower Federal courts of jurisdiction over the action of state regulatory bodies in the fixing of rates, where proper notice and hearing has been afforded and where state law gives adequate relief in the state courts. This means there has been removed the threat and practice of original interpretation by Federal courts of state law and legislative acts of state commissions; of long years of litigation and consequent suspense of the regulatory processes; of *de novo* proceedings in which the decision of the state com-

mission may be annulled upon a record differing from that which was presented to it and upon which its judgment was based; and of the usurpation and control by the Federal courts through judicial proceeding of the legislative processes in the determination of local rates.

THIS legislation, however, although conceded by Mr. Seavey to be helpful to the state commissions, does not provide the help needed by the Supreme Court. Having set forth the need, he proceeded to supply the means whereby, in his opinion, it might be satisfied. He said:

It is my personal conviction that there is a substantial remedy which may be applied and I will have the temerity to suggest it to you today. It is that the Judicial Code again be amended, this time by providing:

First: That where, after proper notice and opportunity for hearing, rates fixed by a Federal or state commission are found by a court to produce a fair return upon the original or historical cost of the property devoted to and useful in the public service, the evidence supporting such finding shall constitute *prima facie* proof that such rates are just and reasonable.

Second: That no such order of an administrative commission shall be set aside, modified, enjoined, suspended, or restrained by any court upon constitutional grounds unless the court shall find that such rates are confiscatory.

The first provision establishes a rule of evidence which unquestionably may be imposed upon the judiciary, and indicates a criterion upon which the consideration of rates may be stabilized. The second constitutes a legislative interpretation of the rights of the regulatory body and the consumer to a decision upon the merits of a case rather than upon procedural technicalities.

Legislation of this character to my mind is imperative if full and proper effect is to be given to the Federal Power Act and the regulatory laws of the states.

SUCH a proposal, in the opinion of *The Wall Street Journal*, is merely another "effort to detour around the law of the land." Says this financial newspaper:

The proposal is to legislate value, that is, to define the value of a property as the original historical cost thereof—though apparently without limiting the administra-

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Dallas Morning News

BIG JOBS LOOMING

tive body's discretionary power to determine how much of the property is presently useful in the public service.

Something might be said for the proposal to make original historical cost the rate base, provided the rule were to be applicable only to investments made after the enactment of such a law. In that case the investor would acquire property and dedi-

cate it to the public use with previous knowledge of the rate-making rule which must govern its profitability. But to make such a rule applicable to existing utility property, the investment which was made under the long settled determination of fair value as of the time the service is rendered, could be, and in many cases would be, practical confiscation.

WHAT OTHERS THINK

Another serious objection can be made to Mr. Seavey's proposal. If at any time after his amendments had been made (assuming they were upheld as valid law) the present value of utility properties should fall distinctly below their original cost, would the Seavey law long survive?

There's the rub, of course. Many an advocate of rate-making legislation, dating back nearly half a century to the early days of William Jennings Bryan, has jumped from one side to the other in harmony with the relation between present value and original cost.

Even this tendency to change sides would be obviated by some of those who

would "legislate value." Already, as *The Wall Street Journal* pointedly observes, the proposal has been seriously advanced in Congress to decree that the rate base shall be original or reproduction cost, "whichever is lower."

GEORGE E. DOYING

THE FEDERAL POWER ACT AND KINDRED LEGISLATION WITH REFERENCE TO STATE REGULATION. Address by Hon. Clyde L. Seavey before American Bar Association Convention, Boston, Mass. August 25, 1936.

"HEADS I WIN"—AGAIN. Editorial. *The Wall Street Journal*. August 26, 1936.

The Federal Power Commission "Analyzes" Comparative Electric Rates

SINCE 1933, the Federal Power Commission has become increasingly important as the result of additional duties delegated to it by Congress. Not the least important phase of the commission's work has been the various technical investigations it has undertaken by authority of congressional resolution; and not the least important of these investigations has been the electric rate survey whereby the commission undertook to set forth in plain and simple form, suitable for comparative purposes, the rates charged in the various communities throughout the United States.

Previous reviews in this department of various reports by the commission on matters it has investigated have invariably commented upon the fairness, thoroughness, and general excellence of the commission's work. It seems unfortunate that this record appears to be marred by the commission's final summary of its rate survey. It is marred because the commission seems to be striving to attain a desired result instead of letting the figures speak for themselves.

The work is too comprehensive to go into figures for various sections. Such data must be obtained by original inspection. Let us, however, glance at

some of the high spots developed in the commission's "analysis." First of all, there is the matter of taxes and its "equivalent." The report reaches the questionable conclusion that municipally operated electric utilities, in the aggregate, pay a higher percentage of their gross revenues for taxes (or equivalent) than privately owned utilities. Here is the basis of the calculation: The actual taxes paid by the privately owned utilities—mandatory (increasing) payments from which there is no escape—amounted in 1933 to 12.5 per cent (14.1 per cent in 1934) of their net operating revenues, while the municipal plants paid only 0.9 per cent. This is the actual tax comparison. These figures speak for themselves but they do not say what pleases the commission, so we must have an "adjustment." To the municipal plant figure, therefore, the FPC adds 14.2 per cent of municipal plant revenues as the amount of cash contributions paid to local treasuries—voluntary payments which happened to be made in 1933 and may or may not be continued.

IT is also worthy of note that whereas the taxes paid by private utilities are reported for 1933 and 1934, the taxes

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and contributions paid by municipal utilities are shown only for 1933, the year in which local treasuries probably sustained their heaviest burden due to the depression.

The designation as taxes of the 14.2 per cent of revenues said to have been paid to city treasuries by municipal utilities is hardly defensible. Such payments are not mandatory, in the sense that taxes are mandatory; they do not necessarily represent profit or net earnings, as assumed in the report, but may have been taken arbitrarily from gross revenues without regard to proper maintenance and adequate service; they have not the remotest relation to tax levies which must be paid by a private utility whether or not the plant earns a profit; they are flexible sums received by a municipal agency for one purpose and diverted to another. It would be just as logical (or illogical) to add the net earnings of private utilities to the taxes they pay and set forth that sum as the amount to be compared with the actual taxes plus the contributions made by municipal plants to the local treasuries.

Somewhat more equitable but entirely novel is the "free service" item which the FPC credits to municipal plants as an offset to actual taxes paid by private utilities. The value of this service is calculated by the FPC as 7.4 per cent of revenues of municipal plants in 1933. No mention is made, however, of "free service" which may be rendered to a city by a private utility in consideration of its franchise, where such requirements still exist.

ASSUMING the FPC calculation of 7.4 per cent for the above item is correct, and the 0.9 per cent of actual taxes is added, a total of 8.3 per cent represents the most liberal maximum offset to the 12.5 per cent paid in actual taxes by private utilities in 1933. The amount in dollars paid by 1,216 private utilities (98.5 per cent of the entire industry) was \$206,988,870, whereas the amount

in actual taxes paid by 1,618 municipal plants was \$957,629.

A certain degree of plausibility is found in the explanations made by the FPC as to each of the innovations injected into this rate study. Viewed as a whole, however, it is apparent that each point has been so resolved as to place public ownership in the most favorable light. The following point is about the best illustration:

The commission earlier in this rate report series adopted a weighted-average formula for rate comparisons, using population as a basis, on the theory that it was proper to give consideration to the number of persons to whom the rates would be applicable. So far so good. Yet in the present report a further refinement is made in an effort to indicate that municipal rates are lower than those of private utilities.

The report does not present over-all state averages, and the state of Iowa is selected to show why this should not be done. Arranging all municipalities in population groups and showing the number served by municipal and private utilities, respectively, a comparison of the weighted state averages favors the private companies by 3.1 per cent for the entire state. But there are no municipal plants in the three largest population groups, so these groups are eliminated and a rate comparison is made for the six smaller groups. By this method it is made to appear that the rates of private utilities are 11.3 per cent higher than those of municipal plants.

Notwithstanding this device, the fact remains that a population of 1,279,839 in 962 Iowa communities have available to them rates 3.1 per cent lower than the charges of municipal plants serving a population of 178,149 in 116 communities. These figures speak for themselves if they are let alone.

—F. X. W.

ELECTRIC RATE SURVEY. Rates Series No. 5.
Federal Power Commission. Washington,
D. C. July 13, 1936.

The March of Events

REA Funds Allotted

THE Casa Grande valley and the Gila Indian Reservation in Arizona and ten counties in Iowa, Minnesota, and Wyoming will be electrified with \$987,500 allotted by the Rural Electrification Administration, it was reported last month.

The San Carlos irrigation and drainage district of Florence, Ariz., has been allocated \$145,000; Rural Electrification Corporation of Marshalltown, Iowa, private operating company, has received \$33,500; Humboldt County Rural Electrification Association, Humboldt, Iowa, \$245,000; Franklin County Rural Electrification Cooperative, Hampton, Iowa, \$419,000; P. I. C. K. Cooperative Association, Bradham, Minn., \$81,000; and Platte County Cooperative Rural Electric Association, of Wheatland, Wyo., received \$65,000.

Story Called "Propaganda"

CHAIRMAN Paul A. Walker of the telephone division of the FCC asserted recently that stories purporting to cast reflection on the work, the character of the evidence produced, or the personnel investigating the A. T. & T., "are nothing more than insidious propaganda, intended to discredit the investigation and dishearten the personnel," according to *The Wall Street Journal*.

Without denying that the directing personnel of the investigation would be changed, Mr. Walker said that statements as to the purported changes were unauthorized and without any official sanction, the *Journal* stated.

Mr. Walker's statement as published in the *Journal* follows:

"The telephone investigation is going forward with full speed, with a splendidly qualified and highly capable staff of assistants. It is a tribute to regulation that so able a group of men could be assembled in so short a time for this most important utility investigation now before the country.

"Stories purporting to cast reflection upon the character of the evidence produced or the personnel are nothing more than insidious propaganda tending to discredit the investigation and dishearten the personnel.

"Statements as to the purported supplanting as counsel of Samuel Becker, a brilliant lawyer of high integrity, and the forced resignation of John H. Bickley, chief accountant and recognized as one of the very ablest accountants engaged in utility regulation, are wholly unauthorized and without any official sanction whatever.

"Much good has already been accomplished for the public by the investigation, and by the valuable and high-class evidence produced. The investigation will continue to go forward without let-up, and its result will merit the commendation of telephone users and all those sincerely interested in the protection of the public through utility regulation."

However, revision of the Federal Communications Commission's investigation of the American Telephone and Telegraph Company was indicated with the appointment on September 1st of a new associate attorney. The new FCC counsel is Carl I. Wheat, who won recognition by effecting several utility rate reductions on the West coast. Mr. Wheat will supervise the inquiry's rates and tolls section, and will serve with Samuel Becker, associate special counsel for the inquiry, Chief Accountant John Bickley, and Chief Engineer Cyrus Hill.

Studies Rates to Radio Units

RATES charged by the American Telephone and Telegraph Company and associated Bell companies for wires leased to radio broadcasting companies were reported last month under scrutiny by Federal Communications Commission officials in connection with the telephone investigation. The commission has received returns from all broadcasting companies, in response to a questionnaire, it was said. When public hearings in the inquiry are resumed this fall, it is understood this will be one of the first matters on which A. T. & T. officials will be questioned.

Agitation in Congress, led by former Senator Clarence C. Dill of Washington, against what was termed the "excessive" cost to broadcasting companies of leased wire service, was one of the direct causes of the A. T. & T. investigation. Senator Dill asserted that the cost of telephone service was such that smaller radio stations were deprived of network programs by the "prohibitive" cost.

David Sarnoff, president of RCA, recently stated that the cost of telephone wire service to the National Broadcasting Company was in excess of \$5,000,000 a year. Columbia, it was believed, pays nearly that amount annually.

Labor Statistics

THE regular quarterly autumn collection of retail prices by the United States Bu-

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reau of Labor Statistics for purposes of computing changes in the cost of living was to be made as of September 15th, it was announced last month by Commissioner Lubin. The bureau collects retail prices of commodities and services that are of major importance in the budgets of wage earners and low-salaried workers.

For more than twenty years, utility companies have coöperated in this service. Rate changes for electricity for residential use

were reported by mail on forms provided by the bureau, by 64 companies located in 51 of the larger cities of the United States, it is reported.

In view of the great value to the utility industry of the data collected by the Bureau of Labor Statistics as a result of its regular surveys of cost of living, the utility companies in the cities covered were urged to request their staffs to continue their coöperation to the bureau.

Arkansas

Water Rates Cut

DECLARING that the Blytheville Water Company had been earning more than a 6 per cent return on its investment, the state department of public utilities on August 21st ordered it to file within ten days a revised schedule of rates, retroactive to July 1st, to make a reduction of not less than \$3,600 in its annual gross revenue.

Both the Blytheville Water Company and

the city of Blytheville, which had complained of excessive water rates, were ordered to show cause within ten days, if any, why the first part of the order should not be carried out.

In reaching its decision, the department announced its approval of the principle of rewarding efficient utility management by equitable distribution between the utility and its customers of excess earnings above a fair return.

California

Bans PWA Aid

PWA Administrator Ickes threw cold water last month on the probability of San Francisco obtaining Federal financial aid for either rapid transit or power distribution. The *Associated Press* quoted the Secretary of Interior as saying the PWA, in its present status, would be unable to assist the city on either project. Both projects, he said, involve too great an expenditure.

The fact that the city has not yet held bond elections to provide its share of the costs was another obstacle, he added, in view of President Roosevelt's recent statement that allotments would be limited to those cities which have already authorized expenditure of local funds and where the government felt it had a moral obligation to help.

San Francisco had applied for a 45 per cent grant on both projects, but had amended its rapid transit application to ask for only \$6,775,200, which would be 45 per cent of the cost of the rough construction work on the Market street unit of the subway and rapid transit program. Additional factors against a rapid transit grant, Ickes said, were that labor costs would be too high and the work would take too long to finish. City officials were not inclined to take the secretary's answer as final.

Little if any help had been expected on power distribution, as the plan favored by the

utilities commission and a majority of the supervisors called for new construction amounting to only about \$3,000,000 out of a total estimated expenditure of more than \$43,000,000. The balance would go for purchase of existing facilities, on which Federal aid could not be expected.

Allows Power Exchange

PERMISSION for Southern California Edison Company and the San Joaquin Light and Power Corporation to enter into a 10-year contract for the interchange of electric energy was granted August 20th by the state railroad commission.

In support of the application of the two systems for authority to negotiate the contract, it was reported that the Edison Company would have a surplus of power until 1943, or longer, and that the San Joaquin Company would require more power than it is generating, and that construction of a steam plant would involve the expenditure of \$4,000,000. It was proposed to construct two transmission lines between Edison Company substations at Magundan and Big Creek and the San Joaquin system, at a cost of \$1,300,000.

Opposition to the program was expressed by the water project authority of the state of California, the governing body for the construction of the Central valley water project,

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which stated its objection to any development that may cause power to flow into northern California in such volume as to prevent or delay absorption of Central valley water project power.

Company officials testified that the tie-up would prove a benefit to the project. The commission, in the interest of safeguarding the water project, reserved jurisdiction to make such changes or modifications in the contract as it deemed necessary. The contract will become effective July 1, 1937.

Rejects Power Plan

By unanimous vote the Glendale city council on August 20th rejected a proposed sup-

plement to a contract under which the Los Angeles power bureau was to transmit electrical power from Hoover dam to the city of Glendale. Councilmen declared that the principal objection was to a clause requiring Glendale to obtain written consent from Los Angeles before purchasing power from any source other than Hoover dam.

The city council indicated that it would take the matter to court and engaged counsel to protect its rights in the controversy.

E. F. Scattergood, head of the Los Angeles Bureau of Power and Light, it was subsequently announced, will submit a third draft of the supplement and exclude from it the provisions objected to, leaving the way open for an amicable settlement of the controversy.

District of Columbia

New Phone Rate Reduction

WASHINGTON'S new reduced telephone rates went into effect on September 1st, as ordered August 27th by the public utilities commission. The reduction was estimated at \$250,000 a year.

Unlimited residence phones were reduced from \$4.30 to \$4.20 a month and a new schedule was created for two-party unlimited residence lines at \$3.50 a month. The price of hand sets was reduced from \$2.50 to \$1.50 cash, or 15 cents a month for twelve months, instead of eighteen.

Individual business telephones, 50-message measured service, were ordered reduced from \$1.60 to \$3.50 per month. The 100-message business service was left at \$5.50 for 110 messages but the rates for subsequent messages were reduced so that the first 40 excess messages cost 5 cents each instead of the first 50, the next 50 messages 4 cents, and all over that 3 cents. Other schedules were reduced correspondingly.

The telephone company was notified last June by the utilities commission that its profit had exceeded 6 per cent on valuation by \$250,000. The company responded with the foregoing rates as a means of overcoming the excess. Richmond B. Keech, acting chairman of the commission, said residential subscribers would absorb 54 per cent of the total

reductions, compared with 46 per cent for commercial users.

Reports Intention to Sell

RETURN of control of the Washington Gas Light Company to local investors was forecast last month with the filing with the Securities and Exchange Commission of a registration statement proposing to sell approximately 109,000 shares of common stock of the gas company held by the Washington & Suburban Companies, a Massachusetts trust. This represents about 85 per cent of the common stock.

It was estimated that by the proposed transaction outside interests may stand to lose between \$5,000,000 and \$10,000,000, calculated on the basis of the higher prices, up to \$125 and \$135 per share, at which outside interests purchased the stock several years ago.

Dissolution of the Washington & Suburban Companies was contemplated in the move for sale of the stock, it was reported. Acting Chairman Richmond B. Keech of the District public utilities commission, said the financial move, if consummated, would be highly advantageous if it meant return of majority ownership of the stock to Washington people, and if it meant the end of the foreign control exercised by the Massachusetts common law trust.

Illinois

Denied Temporary Rate Increase

THE Illinois Commerce Commission last month denied petition of the Peoples Gas

Light and Coke Company for a temporary increase in rates pending final order in the permanent rate increase case. On June 12th the commission refused to allow an increase in rates to cover the 3 per cent state sales tax. Hearing on the company's June 26th petition

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for permanent rate increases was to be resumed September 15th. These increases would yield about \$2,475,000 additional income annually if obtained. The commission stated:

"The necessity for the commission being allowed a reasonable opportunity to make a full factual investigation in this case, so that it can intelligently pass upon the merits of the company's contentions, cannot be overemphasized. This is especially true in view of the fact that the increase now sought would not only deprive the gas consuming public of the sole benefit (*i. e.*, lower rates), that results from the introduction of natural gas into the city of Chicago, but, in addition, would require the company's customers to pay substantially

higher rates for the so-called cheaper mixed gas now being distributed than those paid for straight manufactured gas prior to the use of natural gas."

The commission found that the company, under existing rates, was earning approximately 6 per cent.

The commission said the whole picture as disclosed by the record failed to present a situation of a company in a distressed condition, or one that would suffer while awaiting an "orderly and reasonable investigation and consideration by the commission of its condition of affairs."

The company is planning an appeal to the courts "for the increase that it believes it is justly entitled to receive."

Kentucky

Asks Rate Rehearing

THE Maysville Water Company last month renewed its fight for higher water rates before the state public service commission in a petition for rehearing on an order entered early in August by the commission denying a request for a temporary increase in rates.

The water company denied that its application asked for a temporary increase in water rates. Attorneys for the company did appear before the public service commission in July, however, asking for temporary rates that would enable it to install meters in the Maysville system, now largely unmetered.

The most recent pleading filed by the attorneys for the water company asked for a new order setting aside the former decision, and immediate hearings on its original application.

Previously, in a brief on the legal questions involved, the water company urged that immediate hearings were unnecessary.

Its petition for rehearing urged that the commission was without authority to deny the company's application for higher rates without a hearing. The rehearing petition also questioned the right of the commission to exercise any control or regulation over issuances of securities proposed by the company.

Mississippi

Seeks Power Plant Funds

FORMAL application for funds necessary to construct a municipal electric light plant at Columbus was filed on August 27th, the Public Works Administration has announced. The municipal authorities propose to borrow

\$154,550 which would be supplemented by a grant of \$126,450. The latter amount would be used entirely for the employment of labor now on relief rolls.

It was said the project must run the gauntlet of PWA's power division, as well as its legal, finance, and engineering divisions.

Nebraska

Votes Power Bonds

By a margin of 70 votes, Columbus residents last month authorized a bond issue not to exceed \$250,000 for the construction or purchase of a municipal distribution system for electric light and power. The vote was 1,196 to 1,126.

The issue allows Columbus to construct a new system or to purchase the one in use from

the Northwestern Public Service Company and distribute power and electric energy purchased from the Loup river public power district.

Sees "Little TVA" Victory

SECRETARY of the Interior Harold L. Ickes last month predicted that the government will defeat utility companies seeking to block

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PWA's "little TVA" in Nebraska. He said he believed the temporary injunction held by power companies against development of electricity at tri-county projects would be dissolved when the U. S. Supreme Court passes on PWA's municipal power program.

Appropriates Funds

AN appropriation of \$37,000 has been made by directors of the Loup river public power district to finance preliminaries to the construction of a high tension transmission line from the Columbus hydro plant to Fremont,

it was announced last month. An aerial photographic survey of the land topography, it was said, would be followed by a complete field survey of the ground, procuring of right of way, and advertising for bids for the construction.

The initial appropriation was expected to carry the project through these stages up to the letting of the contract. Field parties were to be put to work as soon as they could be organized, the intention being to have the line completed to Fremont before spring. Eventually it will be extended from there to Omaha.

New York

Radio to Link Fire Forces

AFTER nine months of research and experimentation, the New York city fire department early in the fall will begin installation of two-way radio equipment on the city's nine fire boats and the construction of a transmitter in the Fire College building in Long Island City, it was announced last month.

Commissioner John J. McElligott said it marked the first step in a program to link the various units of the department by radio. He predicted the eventual use of television for the transmission and reception of alarms, and said he already had requested the Federal Communications Commission to set aside certain wave lengths. He hopes eventually to install equipment similar to the fire boat radio equipment in 35 department cars and to install

a short-wave receiving set in each fire house.

Savings to Consumers

ANEW schedule of electric rates for the Yonkers Electric Light and Power Company, estimated to save customers a total of \$610,000 a year, compared with the rates in effect in 1933 before a rate case was instituted by the state public service commission, went into effect on September 1st.

In the final order a minimum monthly bill of \$1, for which 12 kilowatt hours are allowed, was provided. The rate is 6 cents a kilowatt hour for the next 10; 5 cents for the next 28; 4½ cents for the next 150, and 2 cents for all over 200 kilowatt hours. This schedule was said to represent a sharp reduction over former rates.

North Carolina

Power Lines Financed

SIX rural electrification coöperatives in North Carolina have secured \$1,060,000 from the Federal Rural Electrification Administration to supply current to over 5,000 farm customers, the state REA revealed last month. A total of 7,790 miles of lines will be built or are being constructed by the coöperatives.

Estimated customers total 5,083, but the final figures may be either more or less after construction of extensions, it was reported.

The largest coöperative yet approved by the Federal authorities was said to be in Caldwell county where \$433,000 will be spent to provide 349 miles of lines for 2,160 customers. Power will be secured at wholesale rates from the Duke Power Company.

Ohio

To Vote on Municipal Plant

THE East Liverpool city council last month authorized preparation of legislation for construction of a \$1,500,000 municipal electric

light and power plant. It was expected that the PWA would provide \$675,000, while the balance, \$825,000, would be raised by floating a bond issue. The project is to be submitted to voters at the November election.

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Voids New Contract

LEGISLATION granting the Toledo Edison Company a new power rate contract for three years was repealed on August 19th by the city council, one day after its enactment. Officials said they had learned that the saving under the new contract would be only 3 per cent instead of approximately 15 per cent which officials thought they were getting, since the company had filed a new rate June 25th with the state public utilities commission granting similar reductions to users of large amounts of power. City Manager John Edy charged the company broke faith with the city by keeping silent on the June 25th rate during the negotiations.

The city council had voted a 3-year contract instead of the usual five and had ordered study of a proposal made by a firm for installation of a city-owned plant.

Asks Municipal Gas Report

THE utilities committee of the Cleveland city council on August 21st took a plunge in the direction of municipal ownership of

a gas system with a request that the administration have its experts report fully on the possibilities. The committee asked Law Director Alfred Clum for the report after a day spent in questioning L. R. Howson and C. H. Montgomery, the city's experts, on the facts to be used in negotiating a new franchise with the East Ohio Gas Company.

The report of Howson and Montgomery said that a pipe line and distribution system for gas from the Texas Panhandle would cost about \$75,000,000 and a pipe line and distribution system for gas from the West Virginia gas fields would cost about \$17,500,000.

Director Clum said that the city charter permitted operating a gas system but that the financial situation, and the law relating to it, made a municipal ownership difficult at this time. The city has exhausted its bond issuing power, Clum said.

Councilman Joseph A. Artl, Democratic floor leader, said he would start a campaign among Cleveland members of the Ohio legislature to obtain enabling legislation to permit offering of a municipal ownership proposal to voters, if municipal ownership should be found feasible.

Oregon

Phone Rates Cut

PATRONS of the Pacific Telephone and Telegraph Company in Oregon will save approximately \$90,000 annually as the result of a new tariff filed with the state utility commissioner last month.

The most important rate reduction involved eventual elimination of the extra charge for the hand-set telephone. The charge of 25 cents a month was reduced to 15 cents and will be eliminated entirely after customers have had the hand set for eighteen months. An installation charge of \$1 will be made. This change, it was estimated, will affect users of 30,000 telephones in Oregon and will reduce telephone costs \$70,000.

Another reduction involved the charge for switching keys used in lieu of stations. Long-distance rates within the state were also adjusted in an effort to approach parity with the present interstate long-distance rates filed by the Bell system with the Federal Communications Commission.

Electric Rates Voluntarily Reduced

VOLUNTARY reduction of the Pacific Power and Light Company's electric rates in Oregon districts was announced last month by Public Utilities Commissioner Frank C. McColloch. Residence, commercial, lighting, and power rates will be reduced an average of 7 per cent, effective October 1st. Total savings to customers were estimated at approximately \$100,000 a year.

It was stated that the main purpose of the rate readjustment was to make the company's rates simpler and more promotional in character.

With the new rates, 2-cent electricity will be available to all Oregon residence customers for use in excess of 12 cents to 150 kilowatt hours a month, compared with a present low step of 3 cents. It was expected the new rates would aid the company in development of its Oregon business.

Pennsylvania

To Fight Rate Cut

THE state public service commission on August 31st said that the Pennsylvania Power and Light Company has stated it would

appeal the recent order that rates in the Williamsport operating division be reduced. The company said the appeal would be filed in superior court, but set no time.

On August 12th the commission ordered the

THE MARCH OF EVENTS

company to file, within thirty days, a new schedule of rates that would cut the charge for each 100 cubic feet of gas to domestic users from 20 to about 14 cents. The commission decreed that the new rates should produce annual revenues not to exceed \$334,584, or \$92,416 less than at present. It also directed the company to file a tariff designed to yield gross annual revenue not exceeding \$346,204 for the period from November, 1931, to April, 1934.

Warns Holding Companies

THE state public service commission on September 1st accused some utility holding companies of "setting up various service companies to prey upon operating companies and milking them of profits that should be

returned to the consumers by way of reduced rates." Commissioner Thomas Buchanan, sitting at Pittsburgh in a rate case involving the Solar Electric Company, which operates in Jefferson county, made the assertion.

Commissioner Buchanan and David I. McCahill, attorney representing the company, had a heated debate after Mr. McCahill reported that his company had failed to provide data on the service companies which the commission asked a month ago. Mr. Buchanan stated:

"The commission takes the position that it cannot and will not allow charges from servicing companies of the Associated Gas and Electric group to be included as operating expenses for rate-making purposes to the consumers of the Solar Electric Company unless a full and complete explanation of such charges are placed upon the record in this case."

South Carolina

Merger Petition

J. W. WOLFE, chairman of the state public service commission, recently announced that September 15th had been set as the date for the commission to consider the merger petition of the Lexington Water Power Company and the Broad River Power Company, both of Columbia.

The Federal Power Commission, it was said, had already received testimony on a similar petition presented to it, but had not announced its decision. Approval of both the Federal and state governing groups was said to be essential before the merger of the companies can be accomplished.

Bus Substitution Held Satisfactory

PAUL A. COOPER, Columbia city attorney, last month said he felt "sure" the revised order of the state public service commission requiring a complete substitution of busses for street cars in Columbia "will be satisfactory to council."

The commission on August 19th handed down an order amending a previous order by eliminating or modifying several conditions to which the Broad River Power Company, which operates the city's transportation service, objected.

The revised order required a complete substitution of busses for street cars on all lines in Columbia and its environs by November 15th, its effectiveness dependent upon the ac-

ceptance of its terms by the power company prior to October 1st.

Cooper said that, under the franchise contract between the city and the power company, the company would be required to remove its tracks from the streets upon the discontinuance of street-car service.

A provision contained in the original order, reserving to the commission the right to rescind the order at any time should any portion of it be declared invalid was eliminated. However, the commission set forth that, after the substitution, it would retain the same right and power to regulate transportation in Columbia as when street cars were used.

Company Reports Studied

TWO members of the Federal Power Commission's staff began a study of power company reports last month in cooperation with the utilities division of the state public service commission.

Walter C. Herbert, assistant director of the division, said J. Barney Parrott and E. S. Bullock of the Federal Power Commission office at Atlanta had been sent to check financial statements and operating records of power firms doing more than \$1,000,000 in annual business in South Carolina. Herbert said the state division was cooperating by supplying reports of the companies and other data. The request for cooperation came from Major A. R. Wellwood, regional director at Atlanta, and former chief engineer of the state organization.

Tennessee

Warns of Dead Line

FEDERAL Judge John Gore stationed at Nashville on August 21st warned the Tennessee Valley Authority that it must file its answer to the temporary injunction plea of 19 southern utility companies by September 5th. The power companies were given until September 15th to file a brief on their injunction bill.

The utility companies are seeking to have the TVA enjoined from further expansion of its power program and activities. Judge Gore, designated as trial judge, said in his recent order he would reserve the right to set a time and place for hearing the injunction motion, after briefs and answers have been filed. It was believed the hearing would be held in Knoxville at a special session of court.

Before the hearing, Judge Gore was to decide whether the case may be tried in Tennessee. The TVA has filed a motion to have Federal courts in Tennessee declare it outside their jurisdiction, since the official TVA headquarters is at Muscle Shoals, Ala.

Postpones Power Hearing

PRIVATE utilities on August 18th were granted another month to prepare for a court fight being waged against the Tennessee Valley Authority supplying Chattanooga with electrical power.

Judge Lon Foust of a Tennessee chancery court, postponed for a month a hearing on the temporary injunction recently granted the Tennessee Electric Company. The injunction restrained the city of Chattanooga from proceeding with issuance of \$8,000,000 in bonds for construction of a distribution system for use of TVA power.

Despite the injunction, however, Mayor Bass and the Chattanooga Electric Power Board have signed a contract for TVA power and forwarded it to TVA Chairman A. E. Morgan.

PWA Loan Declared Illegal

THE Memphis Power and Light Company on August 20th sought, by a suit filed in chancery court, to enjoin the city of Memphis from proceeding with plans to construct a distributing system to bring TVA power to Memphis. The suit was filed after an earlier announcement by Major Thomas H. Allen, chairman of the city light and water commission, that the city had dropped negotiations to buy the company's distribution system and would go ahead with plans to build transmission lines to connect with TVA's system.

It attacked the TVA proposal on grounds that it constituted a "surrender and abdication to TVA, a Federal government agency, of the sovereign and governmental powers, functions, and duties of the state of Tennessee," and of Memphis.

The suit asked that the city be restrained from proceeding with sale of \$3,000,000 in bonds with which to start the distribution system, and questioned power of the legislature in authorizing a \$9,000,000 bond issue for construction of the system. Authority of TVA to furnish the city power also was questioned. The suit claimed sale of TVA power constituted an outright sale and was not power generated incidental to a proper governmental function of navigation and flood control. It contended that the city of Memphis would be powerless to fix rates and prescribe regulations and means of maintaining the distribution system.

The utility anticipated that the city might be able to finance the project through a PWA loan, and said such a loan would be illegal because (1) PWA would be allowed to usurp the power of city and state in reserving authority to fix the rate and hour scale of workers; (2) PWA was without authority to finance or supervise the arrangement because no analysis of the project's cost in relation to labor, unfair trade practices, etc., had been made by PWA.

Texas

Franchise Provides for Rate Cut

AN ordinance introduced in the city council by Mayor C. K. Quin, which provided for a 20-year extension of the electric light and power and gas franchise of the San Antonio Public Service Company, was given its first reading last month. Final adoption was regarded as assured. The ordinance provided that the electric light and power and natural gas rates should be reduced approximately \$415,000 a year and that the city should

be paid \$100,000 in cash in exchange for the extension of the franchise.

The terms of the proposed rate reductions included a 12½ per cent cut in the higher brackets of domestic electric rates, 10 per cent in commercial and power electric rates, and 5 per cent in gas rates. The terms of the pending franchise were submitted to C. M. Chubb, president of the San Antonio Service Company and approved by him, Mayor Quin said. The new scale of rates would be effective November 1st.

THE MARCH OF EVENTS

It was expected that the renewal of the franchise and the reduction of utility rates would automatically kill the Federal Public Works Administration project said to be pending for construction of a municipal electric light and power plant at a cost of \$10,000,000.

Municipal Pipe Line Urged

CONSTRUCTION of a municipal natural gas pipe line by the city of San Antonio is being promoted by the San Antonio Utilities

League, the membership of which is composed of gas and electric consumers, it was announced last month. Charles M. Dickson, head of the league, said the city could build an 18-inch pipe line, drill its own wells, and retail the fuel to domestic and industrial consumers in the city for approximately half the present rate charged by the San Antonio Public Service Company.

He pointed out that the latter company was paying the United Gas Company 20 cents per thousand cubic feet of gas at the city gate, and that this gas costs the United Gas Company only a fraction more than one cent per thousand cubic feet at the wells.

Virginia

Announces Phone Rate Reduction

A REDUCTION on telephone charges, estimated to save subscribers of the Chesapeake and Potomac Telephone Company approximately \$161,000 a year, was announced late last month by the state corporation commission, effective on bills issued in September.

Charges were lowered on hand-set telephones, extension telephones, outlets for portable instruments, "night, Sunday, and holi-

day" listings; alternate call number listings, jointly used services, connection charges for extra units, and in other items of service.

Total reductions during the year 1936 amount to an annual saving of more than \$248,000 to the telephone subscribers in the territory of this company, the commission stated. The commission also expressed its appreciation of the spirit of cooperation shown by the management of the company in "agreeing to these further reduced charges without the necessity of formal, expensive, and long drawn-out hearings."

Washington

To Seek Railway Loan

CITY Lighting Superintendent J. D. Ross left Seattle for Washington, D. C., late last month to assist further in negotiations for Federal and private money to modernize Seattle's municipal railway, pay off its present debt, and extend city service into Rainier valley. The city council ordered Railway Superintendent Albert E. Pierce to join Ross in the East. Decisive action was expected on the refinancing proposals brought back recently by Isaac Comeaux, chief city accountant, who spent six weeks in conference with Washington officials and New York financiers.

It was also revealed that the Civil Service employees' retirement system, maintained principally by salary contributions from city employees, was considering investing up to \$1,000,000 in the railway's proposed new bond issue. An additional loan of about \$7,000,000 from regular investment bankers, one of \$1,100,000 from the Federal government, and an outright Federal gift of \$900,000 were contemplated in the program.

While in Washington, it was reported, Ross also was expected to further his department application for Federal money to build a new dam at Ruby Creek as the next step in city light's development program.

Plans New Light Cut

ANOTHER reduction in domestic lighting rates, amounting to \$13,600 a month for customers of city light, was recommended to the Seattle city council on August 28th by Lighting Superintendent J. D. Ross. Approximately 80,000 customers would be affected and the Puget Sound Power and Light Company was expected to meet the reduction, should the council adopt it.

A similar saving to domestic users was brought about on Ross' recommendation about a year ago, when the basic rate was cut from 5½ cents to 5 cents on the first 40 kilowatt hours of electricity used each month. The new cut recently proposed would bring the basic rate down to 4½ cents on this same basis.

The Latest Utility Rulings

Tax Deductions from Revenues

CONSTANTLY increasing taxes and changes in the methods of taxation add interest to the recent decision of the New York commission fixing rates for the Westchester Lighting Company. Commissioner Burritt, delivering the opinion, discusses tax deductions as follows:

The company charged the state excess dividends tax and the Federal capital stock tax to operating expenses. The first is a tax based upon the dividends paid and clearly should be borne by the stockholders receiving the dividends. The second is a tax upon the stated value of the capital stock. The company's stock being of no par value, its stated value for taxation purposes is determined by company officials who no doubt were mindful of the possible necessity of paying an excess profits tax based on the net income over a certain percentage of the stated value—no such tax was paid by the company. It is questionable as to whether or not the capital stock tax, being based on capitalization, reserves, and such surplus as is not distributed through dividends, should not also be borne by the stockholders. Certain taxes have been discontinued, and others, notably the Federal income tax, altered. Social security taxes became effective in 1936. The adjusted operating income to be considered in fixing rates must be determined, giving effect to all of these altered conditions known to be operative in the future.

The decision, which required a reduction in rates, was concurred in by Chairman Maltbie and Commissioners Lunn and Brewster, but Commissioner Brewster said that he voted for Commissioner Burritt's memorandum with

the reservation as to the statement regarding capital stock tax.

The commission also dealt with several matters relating to original cost. Prior determinations as to original cost in a capitalization proceeding were held not to be binding on the commission in its present rate determination. It was said that admittedly what was on the company's books was not original cost.

Counsel for the utility had objected to the elimination of "hypothetical overheads" and of installation costs of line transformers and meters in years prior to 1924, and to the failure to consider replacement of certain property of like size and kind. Commissioner Burritt said that these costs had been charged to operating expenses and, in the words of the commissioner:

The operating expenses appearing in the sworn reports of the company to the commission were certified by an officer of the company as true operating expenses of the company year by year. Therefore, following the company's contention to its logical conclusion, in including in operating expenses costs which should have been charged to fixed capital, the company has filed and certified to inaccurate statements not merely in one year but over a period of many years.

It was said to be inequitable and thoroughly unjust to permit the company to earn a return on those costs which the company had already recouped through operating expenses. *Re Westchester Lighting Co. (Case No. 8236).*



Commission Cannot Declare Contract Void and Order Refund of Payments

THE Michigan commission dismissed an application for an order requiring the repayment of certain sums paid to an electric utility for the purpose of

obtaining extensions of power lines and electric service on the ground that the commission lacked jurisdiction to enter such an order.

THE LATEST UTILITY RULINGS

Under a contract between citizens of a village and the Northern Power Company an extension had been made to the village and prospective customers had paid a "bonus" to the company. Later the Consumers Power Company acquired the property of the Northern Power Company, but did not assume its obligations. The commission said:

Without passing upon the merits of the present controversy or prejudicing the rights of the petitioners herein to bring an appropriate action in the courts, the commission is of the opinion that it has no jurisdiction to enter the order asked for by the petitioners.

While the statute which gives the commission jurisdiction over common carriers by rail expressly authorizes the commission to order railroad companies to make refunds under certain circumstances, no similar express authority over electric utilities is found in either the general act creating the commission and defining its powers and duties (Act 419, Public Acts of 1919), or in Act No. 106, Public Acts 1909, conferring power upon the commission over companies supplying electric light and power. If no express authority was conferred by statute,

it must be considered as existing by necessary implication, or none exists.

If a proper application had been made to the commission there is no question but that the commission would have had jurisdiction and authority to order the Northern Power Company to furnish electric service to the village of Sterling and the residents thereof, and to prescribe the terms and conditions under which such service should be furnished. However, the record indicates that no such attempt was made, but in lieu thereof petitioners evidently chose to enter into negotiations with the company for such service and as a result entered into the alleged contract which is now complained of. The sole issue before the commission is whether it can, or should, declare the contract void and order the utility to return the money.

It was said further that any order which the commission might now make for the purpose of prescribing the rules, practices, charges, and services of the Northern Power Company, which had gone out of business, would be beyond the jurisdiction of the commission either to make or to enforce. *Re Abbott et al. (D-2617)*.



Meaning of Restriction on Charges by Commission for Regulatory Expense

THE state of New York like some other states now has in effect a statute imposing upon public utilities expenses incurred in connection with commission investigations. The total amount which a public utility may be charged is limited to one half of one per cent of the utility's gross operating revenues in the last preceding calendar year. The appellate division of the New York Supreme Court has interpreted this restriction.

The question at issue hinged upon the meaning of the words the "public utility shall be charged." Did the legislature mean that the percentage restriction was to apply to the revenues for the calendar year preceding the date of billing to the utility or the year preceding the date when the charges against the utility were made on the commission's books? The court ruled that the latter interpretation was correct.

The commission last October entered two orders. One of these determined that the amount to be paid by the telephone company for the period August 27 to December 31, 1934, was \$2,862.54. The other covered the period from January 1, to June 30, 1935, and fixed the amount at \$3,919.55. The company's gross revenue on which the percentage would have been charged for 1934 was \$783,910.77. One half of one per cent of this revenue is \$3,919.55, the exact amount fixed by one of the orders of the commission.

The company paid this amount to the commission but refused to pay the additional \$2,862.54 on the ground that the company might be charged in any year only one half of one per cent of its gross operating revenue received in the calendar year last preceding the making of the order or orders. The court held, in the following language:

PUBLIC UTILITIES FORTNIGHTLY

the expenses for the portion of 1934 were charged in that year and are payable from the operating revenues of 1933, the then last preceding calendar year, and the expenses in 1935 were charged in that year and are to be limited to one half of one per cent of the operating revenues of

1934. The fact that the charges for both years were billed in 1935 is without significance.

Upstate Telephone Corp. of New York v. Maltbie et al. 289 N. Y. Supp. 523.



Gas Rates for Space Heating

DURING recent years, with the increased use of gas for space heating the utilities have been experimenting with different forms of rates applicable to this type of service. The Michigan commission has recently approved a gas space-heating rate for the Detroit Edison Company without passing upon its reasonableness in bringing a fair return to the company. The rate was voluntarily offered.

Formerly the company had conducted experiments with a rate for gas through a separate meter, but under the new rate a space-heating customer may purchase gas for all his requirements through one meter at the space-heating rate.

The net rate, after discount for

prompt payment, is 50 cents per thousand cubic feet, with a minimum charge of \$5 a month from November to April, inclusive, and 75 cents a month for the other months of the year.

Billing may be monthly by meter, or, at the option of the customer, monthly at one twelfth of the company's estimate of the customer's annual bill. Under this optional plan there is to be included with the twelfth estimated bill, or the final bill, such adjustment as may be necessary to bring the annual estimated bill into agreement with the annual metered bill. This is the plan which has been followed by several companies, sometimes known as the "budget plan." *Re Detroit Edison Co. (D-2130).*



Departure from Newness Not Depreciation

THE New York commission disproved the theory that accrued depreciation is represented by what, in the opinion of a witness, is "the departure from newness." Chairman Maltbie, discussing this idea, said:

What this really is, how it is to be measured, and what disposition is to be made of other causes of depreciation are questions

left unanswered. According to this standard, a new automobile of the vintage of 1910 would have a value equal to its cost new. Perhaps as a museum piece but not in actual use. The estimate omits from consideration too many causes of depreciation to be entitled to much weight.

Re Yonkers Electric Light & Power Co. (Case No. 7606).



Nebraska Commission Assumes Control of Motor Carrier Operators

THE Nebraska commission is given constitutional authority to regulate rates, service, and general control of common carriers as the legislature may provide by law, but in the absence of specific legislation the commission is authorized by the Constitution to exercise

the powers and perform the duties enumerated in this constitutional provision.

The commission, in the absence of any specific legislation covering or relating to certificates of public convenience and necessity, held that this sec-

THE LATEST UTILITY RULINGS

tion gives the commission complete jurisdiction to require certificates by common carriers of property by motor vehicles and adopted regulations for that purpose.

The commission order provides that certificates must be obtained but that any carrier or predecessor in interest who was in *bona fide* operation as a common carrier of property by motor vehicle on April 1, 1936, should be granted a certificate as a matter of right. This is the so-called "Grandfather Clause" or clause relating to good faith operation usually found in statutes.

No exemptions are to be granted except to those operators of motor vehicles wholly within a municipality, or between contiguous municipalities, or within a zone adjacent to and commercially a part of any such municipality, except when such transportation is under a common control, management, or arrangement for a continuous carriage or

shipment to or from a point without such municipality or zone. Moreover, the casual, occasional, or reciprocal transportation of property by any person not engaged in transportation by motor vehicle as a regular occupation or business is excepted. Operators are given sixty days to file applications for certificates. The commission declares that proper regulation includes a reasonable control over ownership in whole or in part of common carriers to the extent that mergers, leases, joint operations, purchases or sales by or to any common carriers are involved and that such control should be exercised in and when the number of units of motor vehicles owned, operated, or under control of all parties to such sale, purchase, merger, lease, or joint operations shall equal the number of ten or more units. *Re Regulation of Common Carriers of Property by Motor Vehicles (Resolution No. 141)*.



Association Contracting for Carrier Service a Necessary Party to Injunction Suit

THE Montana Board of Railroad Commissioners commenced a suit to enjoin an individual from operating motor vehicles on state highways for the transportation of property for hire without authorization from the commission. Injunction was denied because neither an association for which the individual transported property nor the members thereof were made a party to the suit.

The individual operator was the manager of an association of business men banded together for the purpose of handling only the shipping of the goods of the associates under contract with the operator. The commission charged that the plan of operation constituted a subterfuge to avoid regulation.

The court did not pass upon this point but expressed the view that the court was in no position to rule on the question when the members of the association were not before the court, and, if rights they had, their rights could not be taken from them without giving them their "day in court." This was said to be fundamental. The members of the association, vitally interested in the contract between them and the operator, if it were a valid contract, should have been joined with the operator as parties defendant, or the association might have been sued as such. The suit was dismissed by the court. *Board of Railroad Commissioners et al. v. Reed* (58 P. (2d) 271).



Right of Interstate Motor Carrier to State Certificate

A STATE commission is not required to grant its own certificate of public convenience and necessity for the interstate operation of motor vehicles until

THE LATEST UTILITY RULINGS

after the Interstate Commerce Commission has finally decided the permanent status of the applicant under Federal law, according to a ruling by the supreme court of Florida.

Justice Davis, speaking for the court, said that while a motor common carrier claiming *bona fide* the benefits of the Federal Motor Carrier Act under which it would be entitled to continue interstate operations, pending decision by the

Interstate Commerce Commission on its application for a permanent certificate, possesses a Federal statutory right to operate, still this Federal right is of a transient and temporary character only until the permanent status of the applicant has been finally investigated and decided by the Federal commission. Then only must the state commission act. *L. & L. Freight Lines, Inc. v. Douglass et al.* 169 So. 501.



Other Important Rulings

THE court of appeals of Kentucky held that the legislature might properly exempt from the jurisdiction of the public service commission a water district distinguishable from other utilities by reason of assessments on the property contained in the district for the payment of the purchase price thereof and its maintenance. *Middendorf et al. v. Jameson et al.* 95 S. W. (2d) 1057.

The Colorado commission held that it had ample statutory authority to determine whether or not a railroad company may discontinue service between specified points and might commence operation as a motor vehicle common carrier between the same points. *Re McCarthy (Colo.) Application Nos. 3032, 1801-B.*

The Michigan commission held that railroad companies owning a real estate company which in turn owned and operated the Detroit Union Produce Terminal had not sustained the burden of proof to justify an increase in their charges for switching traffic from connecting lines at Detroit to the Detroit Union Produce Terminal from \$7 to \$12.50 a car. The commission was not convinced under the record that the company had established that the terminal should be considered as a common carrier transportation facility rather than as a private facility. The com-

panies had included in the charge an allowance for interest on investment. *Re Increased Charges for Reciprocal Switching (D-2944).*

A motor carrier authorized to engage in group and party service was held by the Pennsylvania commission not to be engaged in such service when it transported employees to and from a factory over a definite route at stated times between fixed termini under contract with an industrial corporation, although it collected the charge from the corporation instead of the individual passengers and the charge was based upon the transportation of the group and not upon the number of passengers carried. Such service, however, was held to be common carriage under contract in a manner not authorized by the certificate of public convenience. *Wilkes-Barre Railway Corp. et al. v. White Transit Co. (Complaint Docket No. 10934).*

The Colorado commission authorized motor carrier transportation of live stock, with the statement that the commission had consistently taken the position that ample service should be afforded the general public for the transportation of farm products, including live stock even though it might mean that during certain seasons of the year a surplus of service would be available. *Re Haines (Application No. 3250).*

NOTE.—The cases above referred to, where decided by courts or regulatory commissions, will be published in full or abstracted in *Public Utilities Reports*.

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Public Utilities Reports

COMPRISING THE DECISIONS, ORDERS, AND
RECOMMENDATIONS OF COURTS AND COMMISSIONS



VOLUME 14 P.U.R.(N.S.)

NUMBER 5

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COLUMBIA SYSTEM extends its services to homes, manufacturing and commercial consumers in Ohio, Indiana, Kentucky, West Virginia, Maryland, Pennsylvania, New York. ¶ Through this most highly industrialized area of the nation, modern facilities for the efficient production and transmission of electricity supplement a network of interconnecting pipe lines which, fed by vast natural gas reserves, provide a dependable fuel supply. ¶ As reflecting the scope of Columbia's activities the following operating statistics, for the year 1935, warrant consideration:

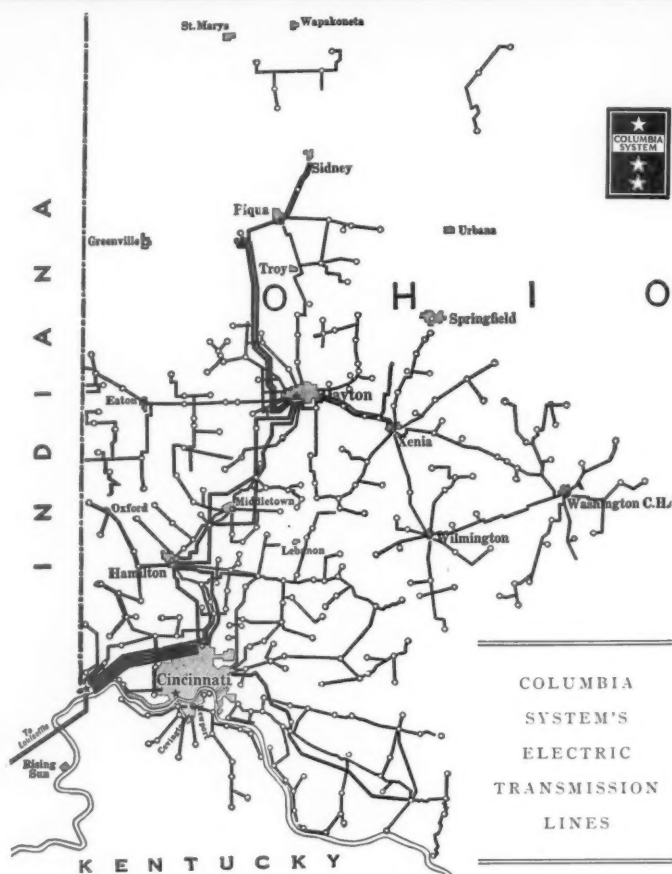
Territory Served		Gas Rights (acres)	
Number of Communities	1,356	Operated	820,500
Population in excess of .	5,000,000	Reserve	3,531,329
		Total	4,351,829
Number of Customers		Gas Wells	
Gas	1,052,194	Producing	8,907
Electric	328,482	Compressor Stations	
Water	8,422	Number	102
Heating	714	Capacity (h.p.)	198,186
Total	1,389,812	Pipe Lines (miles)	
Electric Generating Stations		Field	4,884
Capacity (kv-a)	482,628	Transmission	12,770
Substations		Distribution	12,294
Number	117	Total	29,948
Capacity (kv-a)	887,643	Gas Manufacturing Plants	
Electric Lines (circuit miles)		Daily Capacity (cu. ft.)	45,700,000
Transmission	1,447	Gas Holders	
		Capacity (cu. ft.)	27,659,000

Further information will be furnished gladly upon request.

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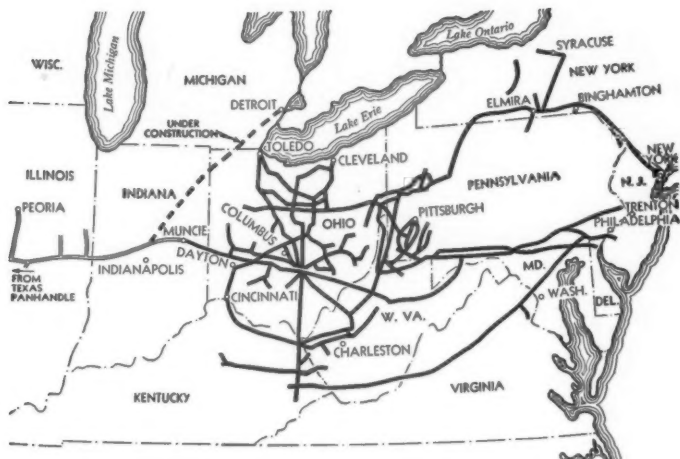


COLUMBIA
SYSTEM'S
ELECTRIC
TRANSMISSION
LINES

ELECTRIC	Customers		Sales (kwh)		Revenues	
	1934	1935	1934	1935	1934	1935
Residential	270,631	280,970	168,680,510	192,308,570	\$7,851,340	\$8,195,045
Commercial	38,557	39,178	114,325,232	131,803,432	4,384,672	4,748,341
Industrial	6,271	6,301	435,976,749	501,502,772	7,032,304	7,511,042
Municipal	1,899	2,010	64,419,694	66,845,119	1,906,702	1,827,353
Other	24	23	179,215,354*	188,688,254*	1,569,912*	1,653,445*
TOTAL	317,382	328,482	962,617,539	1,081,148,147	\$22,744,930	\$23,935,226

(*) excluding electricity delivered on an exchange basis

COLUMBIA GAS & ELECTRIC CORPORATION
61 BROADWAY
NEW YORK



COLUMBIA SYSTEM'S MAIN GAS TRANSMISSION LINES

GAS	Customers		Sales (mcf)		Revenues	
	1934	1935	1934	1935	1934	1935
Residential	944,441	968,285	54,698,738	55,617,744	\$31,744,877	\$32,880,532
Commercial	75,226	76,294	10,127,480	10,312,696	5,321,585	5,473,154
Industrial	2,622	2,641	27,954,552	35,686,121	9,321,884	11,225,496
Other	4,907	4,974	14,263,039	11,521,582	5,709,517	4,938,937
TOTAL	1,027,196	1,052,194	107,043,809	113,138,143	\$52,097,863	\$54,518,119

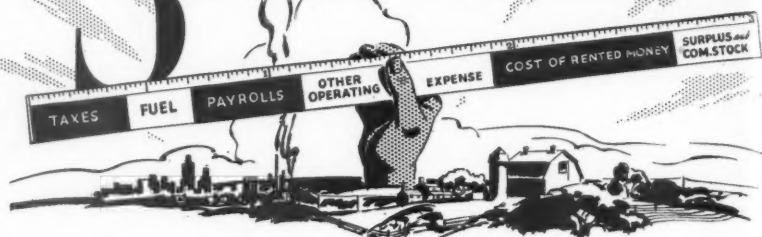


COLUMBIA GAS & ELECTRIC CORPORATION

61 BROADWAY

NEW YORK

A 36inch Yardstick



THERE is nothing secret about the several factors entering into the cost of rendering electric service to the communities served by subsidiaries of the American Gas and Electric Company. Every penny of their expenditures is reported to the several state regulatory commissions and is a matter of public record.

The sections of the yardstick above show graphically the division of each dollar of combined subsidiary revenue in 1935. During the year 13 cents out of every dollar of revenue was set aside to pay taxes. This item exceeded by nearly 50% the cost of the fuel to operate all the companies' steam plants. Taxes approached

equality with the total amount of payrolls in the system. The surplus out of which common stockholders must secure a return on their investment was over a million dollars less than the amount set aside for taxes.

For many years a consistent policy of rate reductions has been carried out throughout the American Gas and Electric Company's system. Since 1927 alone the average domestic rate has declined from 8.3 cents a kilowatt-hour to 5 cents, so that it is now 39.2% below the 1927 level. Ours is a yardstick that measures full value for the dollar the customer spends.

AMERICAN GAS & ELECTRIC CO.

Principal Subsidiaries

Appalachian Electric Power Co.

Atlantic City Electric Co.

Indiana General Service Co.

Indiana & Michigan Electric Co.

Kingsport Utilities, Inc.

The Ohio Power Co.

The Scranton Electric Co.

Wheeling Electric Co.

Kentucky and West Virginia Power Co., Inc.

K GOOD ELECTRIC SERVICE ATTRACTS BUSINESS AND INDUSTRY



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CO.

PROSPEROUS businesses and industries are essential to the modern community. And dependable electric service is as important to industries as railroad sidings. Thus an aggressive utility attracts business and industry to the community by rendering good electric service, and by having it ready even before the demand for it is placed.

◀ This is the utility's service to the community. As we expand, the community grows. As the community grows we keep apace and even ahead of that growth.



**NORTHERN STATES POWER
COMPANY**

MINNEAPOLIS, MINNESOTA

TAMPA

ELECTRIC COMPANY



- was organized in 1899 and financed by the sale of stock.
- today it has no bonds or debt other than current accounts payable.
- it is owned by approximately 6000 stockholders, nearly 1000 of whom reside within its territory.
- no stockholder owns as much as 5% of its stock. The average holding is about 100 shares.
- no regulatory body has ever attempted to regulate its rates or service.
- It receives an average of only 2.49c for each kilowatt-hour sold.
- Every customer residential or otherwise, may purchase electricity for as little as 2 cents per kilowatt-hour.
- it operates a street car system that still has its original 5-cent fare with free transfers within the city limits. School children ride for two and a half cents.
- it pays taxes that amount to approximately \$500,000 per year or about 12% of operating revenue.
- it has never missed a dividend.
- it has given much valuable property to the communities it serves.

★ Tampa Electric Company stands as proof of the benefit to everyone of private ownership, management and operation.



TAMPA ELECTRIC COMPANY

PETER O. KNIGHT, PRESIDENT

Serving Three Counties

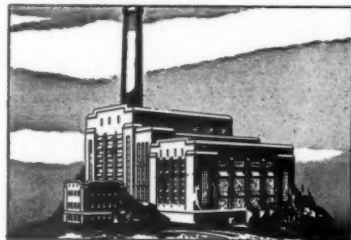
IN THE SUNSHINE STATE

A PAGE FROM THE HISTORY OF PRIVATE OWNERSHIP

Associated's Record of Public Benefit

THE real record of the Associated is written in the service rendered the public by its properties. We submit a few of the records of which we are proud in this system, where average residential electric rates have been reduced practically 25% in the last six years alone.

—ASSOCIATED GAS AND ELECTRIC CO.



WHEN the Associated System acquired control, thirteen years ago, of the small properties serving Cape Cod, Massachusetts, and the Island of Martha's Vineyard, over half of the towns and villages in the territory had no electric service at all, rates were exorbitant, service was continually being interrupted because of run-down facilities. In 1923 poor electric service was supplied 5,889 customers living in 34 communities. In 1936, 19,185 customers in 74 communities get up-to-date service for 40.5% less cost.

IN Kentucky and Tennessee 49 independent electric properties were absorbed, 21 of these from municipalities. Service has been extended into 32 towns and villages and adjoining rural sections where no electric service was available before. Instead of 40 small and inefficient power plants, some rendering only part-time service, there are now two big modern power plants and four auxiliary plants serving more than 32,000 electric customers, including industries which the municipal plants had been totally unable to serve. Average domestic rates throughout have been cut 49.2%, and for the former municipal properties as much as 60%.

ANOTHER major operating unit serves 970 communities and a large rural area of New York State. Since Associated acquired these properties, the distribution system has been increased from 4,341 to 7,561 miles of lines. Approximately 250,000 people in rural territory benefit by electric service who never received it before. The average domestic rate per kilowatt hour has been reduced 57.1%.

HARLEM Valley—1,300 square miles of rural territory north of New York City—was poorly served in 1924 by 15 small independently owned and operated companies. Service could only be had in the larger communities, and there only during certain hours. Voltage varied so that the use of electric appliances, even toasters, was discouraged. Since 1926, under the Associated System, \$4,300,000 has been spent for new construction, including 500 miles of new lines. Twice as many customers now enjoy electric service. Service has been brought up to modern standards, rates lowered 47.7%.

Similar examples could be cited from other properties. This is the real record of Associated.

LET'S GO AHEAD ♦ ♦ ♦ ♦ INSTEAD!

"The presence of Government competition has created such market uncertainties that the preferred stocks of our southern companies are selling at 30 to 40 points below par and it is impossible for them to refund their bonds and preferred stocks or to publicly finance their construction requirements. The money for such construction requirements has, therefore, of neces-

sity been supplied by this Corporation, the holding company.

"This penalty which is being levied . . . by Government incursion into the field of private enterprise, will, unless brought to a halt, of necessity be paid for by either you as security holders or by the rate payers—and probably by both."

*—President Wendell L. Willkie
1935 Annual Report to Stockholders*

A vivid demonstration of the destruction resulting from politically-inspired and fomented assaults on the utility industry. That is typical of the damage created in but one of many directions.

As a manufacturer, an employer, a consumer, a taxpayer, ask yourself what the program of crippling legislation, "death penalties," bureaucratic experiments and the subsidized competition is doing FOR you or TO you. What has this program done to foster industrial and commercial development, strengthen the position of investment savings, or establish firm foundations for steady employment? Does the public stand to gain more from electric service administered under EXPERIENCED AND RESPONSIBLE PRIVATE MANAGEMENT, or subject to shifting political direction?

In the face of governmental interference and unfair restrictions, the electrical industry is bending every effort to further develop its services. Freed from these handicaps, it is prepared to go ahead with greater contributions to the public welfare.

Let's go ahead!

THE COMMONWEALTH & SOUTHERN CORPORATION

MICHIGAN • OHIO • ILLINOIS • INDIANA • PENNSYLVANIA • GEORGIA • FLORIDA • MISSISSIPPI • SO. CAROLINA • ALABAMA • TENNESSEE

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RE BOSTON CONSOLIDATED GAS CO.

MASSACHUSETTS DEPARTMENT OF PUBLIC UTILITIES

Re Boston Consolidated Gas Company

[D. P. U. 4885.]

Discrimination, § 30 — Rates — Use of service.

1. Mere difference in use does not justify a different rate unless the different use creates a dissimilar condition from that pertaining to others, p. 434.

Discrimination, § 109 — Gas rates — Classification — Effect of competition.

2. A classification in which the rate for gas supplied is made lower than the other rates, where competitive or other conditions warrant, should apply to substantially all who obtain and use the service under similar conditions, p. 434.

Discrimination, § 110 — Rates — Gas — Space heating — Automatic appliances.

3. The more uniform and continuous use of gas by those using gas for space heating controlled by an automatic device, this having a tendency to level out the demand on the system during the twenty-four hours of the day, justifies the establishment of a classification of rates applicable to such use, provided the rate established is not so low as to throw a burden on customers served upon higher rates; and such a rate can be justified as a promotional rate under Chap. 365 of the Acts of 1934, p. 435.

Discrimination, § 110 — Rates — Gas — Space heating — Refrigeration.

4. The conditions applying are not so similar as to require that a rate for gas available to any customer, using automatic self-acting gas appliances for his major space-heating requirements and using gas for his other major fuel requirements, be applied to the use of gas in gas refrigerators, p. 436.

Discrimination, § 110 — Rates — Gas — Space heating — Cooking stoves — Regulating devices.

5. The same continuous use of gas in cooking stoves where automatic devices are attached does not obtain as in the use of automatic self-acting gas appliances for space heating, so as to make objectionable on the ground of discrimination a special rate for gas to users of automatic self-acting gas appliances for space heating, as the cooking-stove devices only regulate the heat of the oven while cooking is being done and the length of time the gas is used during the twenty-four hours of the day is not comparable with that of space heating, p. 436.

Discrimination, § 14 — Rates — Classes — Proof as to cost.

6. The Commission ought not to disapprove a gas rate unless it appears clearly that the sale of gas under the rate will throw a burden upon other customers to whom the rate does not apply, p. 436.

Discrimination, § 110 — Gas rate — Space heating — Revenues and expenses — Burdens on other classes.

7. A rate for gas used by customers having automatic self-acting gas appliances for major space-heating requirements was held not to have been proven discriminatory on the ground that it would throw a burden upon

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other customers to whom the rate did not apply where there was a spread of over 20 cents between the cost and the price at which the gas was sold, an amount considered ample to take care of the cost of reading meters, billing, collecting, and the necessary service, p. 436.

Rates, § 375 — Gas — Minimum charge — Space heating.

8. A proposed minimum charge of \$75 a year was increased to \$100 a year in a rate classification available to customers using automatic self-acting gas appliances for major space-heating requirements, p. 436.

(MURRAY, Chairman, and HARDY, Commissioner, dissent; GRANT, Commissioner, concurs.)

[July 13, 1936.]

I NVESTIGATION of proposed rates for gas to be used for space heating; rates approved as modified.

By the DEPARTMENT: In the Department's order of January 28, 1936 (12 P.U.R.(N.S.) 113) in relation to Classification No. 2 of the rates of the company, it was ordered that the company, before March 1, 1936, file a classification of rates, to take the place of Classification No. 2 then in effect, to remove the discrimination which the Department found to be caused by the rate. On February 26, 1936, the company filed a petition for reconsideration by the Department of this order and as a consequence on February 27, 1936, the Department extended to June 1, 1936, the time for the filing by the company of a rate in substitution of its present Classification No. 2. Subsequently the company filed a new Classification No. 2, to become effective on June 1, 1936. The new classification is available to any customer using automatic self-acting gas appliances for his major space-heating requirements and using gas for his other major fuel requirements.

[1] The company relies, as a justification for its rate, upon a statement in the opinion in the case of *Brand v. Water Comrs. of Billerica* 14 P.U.R.(N.S.)

(1922) 242 Mass. 223, 227, 136 N. E. 389, as follows: "But even at common law it is generally recognized that discrimination of rates is permissible, within reasonable limits, except as between consumers who receive the same service under similar conditions. This is especially true in cases of water, gas, and like companies, where a different rate may be made per unit of service to large users, or to persons making different uses of the service, according to substantial authority." We think this statement in the second sentence of the quotation, to the effect that discriminations are permissible "to persons making a different use of the service," is controlled by the statement in the first sentence, "that discrimination of rates is permissible, within reasonable limits, except as between customers who receive the same service under similar conditions." Thus, unless the different use creates a dissimilar condition from that pertaining to others, mere difference in use does not justify a different rate.

[2] In the decision of January 28, 1936, *supra*, at p. 127 of 12 P.U.R.(N. S.) the Department quoted, with

RE BOSTON CONSOLIDATED GAS CO.

approval, what was stated in a decision upon the rates of The Edison Electric Illuminating Company of Boston made July 31, 1934 (5 P.U.R.(N.S.) 369, 381) to the effect that the Department has "rarely interfered with the discretion of a company in establishing competitive rates unless it appeared that the rates were so low as to throw a burden on customers served upon higher rates, or by use of electricity at such rate, generating and distributing capacity was absorbed that was needed for the more profitable customer." In its decision of January 28, 1936, *supra*, at p. 127 of 12 P.U.R.(N.S.), however, the Department stated that: "While there is no statute or law in this commonwealth which specifically prohibits the sale of gas at discriminatory rates, we are of the opinion that, as the Department now has jurisdiction to investigate the propriety of all rates, discriminations should not be allowed between customers receiving the same service under similar conditions, and in no event unless there is some sound ground warranting the discrimination." Thus, where competitive or other conditions warrant the establishment of a classification in which the rate for gas supplied is made lower than the other rates, we think the classification should apply to substantially all who obtain and use the service under similar conditions and it was for this reason we disapproved the Classification No. 2, as it was not open to many using gas under similar conditions, the use to which the gas was applied alone, in our opinion, not justifying the classification. In our decision of January 28, 1936, *supra*, we did not disap-

prove a rate established to meet competition in water heating, which was conditioned on the use of automatic self-acting gas heaters, as we then thought that the use of such automatic self-acting gas heaters tended to a longer and more uniform use of gas than where no heaters or other types are used and thus warranted the classification.

[3] The company's proposed Classification No. 2 is apparently based upon what was said in the decision of January 28, 1936, *supra*, in relation to automatic self-acting water gas heaters and the more favorable rate provided for in the classification is restricted to those using gas for space heating controlled by automatic self-acting gas appliances. Where gas is used for space heating controlled by an automatic device, the use of the gas for that purpose is spread over more hours a day than its use is likely to be in other household uses. This results in a more continuous and uniform use, with less fluctuations, and has a tendency to level out the demand on the system during the twenty-four hours of the day. We think it obvious that a company can afford to sell gas at a lower rate where its use is more continuous and uniform than is usually the case. This more uniform and continuous use justifies, we think, the establishment of a classification of rates applicable to such use, provided the rate established is not so low as to throw a burden on customers served upon higher rates. Moreover, we think the rate proposed can be justified as a promotional rate under Chap. 365 of the Acts of 1934. The rate is conditioned upon its use for space heating where such use is con-

MASSACHUSETTS DEPARTMENT OF PUBLIC UTILITIES

trolled by automatic self-acting devices and where the customer uses gas for his other major fuel requirements. Thus, to obtain the rate for the purposes of space heating the customer must use gas for his other major fuel requirements. This tends to increase the use of gas.

[4, 5] It was argued at the hearing by objectors to the rate that it did not apply to all who use gas under similar conditions. It was suggested that the same continuous use obtains in gas refrigerators and in the use of gas cooking stoves where automatic devices are attached. Theoretically there may be some force in the argument relating to gas refrigerators, but in the making of classifications of rates practical considerations must be taken into account. The use of gas in a refrigerator is so small that as a practical matter the owner of the refrigerator who did not use gas for space heating would not ordinarily use the required minimum amount of the rate. If he uses gas for his space-heating requirements, controlled by automatic self-acting devices, the rate will apply to the gas used in his gas refrigerator if he uses gas for his major fuel requirements. We think the conditions applying are not so similar as to require that the rate shall apply to the use of gas in gas refrigerators. As to the automatic devices applying to cooking stoves we do not think the comparison is sound, as the devices really only regulate the heat of the oven while cooking is being done and the length of the time the gas is used during the twenty-four hours of the day is not comparable with that of space heating.

[6-8] The real question, we think,

presented by the proposed new rate, is whether it can be successfully contended that it throws a burden upon customers served upon higher rates. The rate provides for a charge of \$1.10 for the first 200 cubic feet or less per month, a charge of 9.5 cents per hundred cubic feet for the next 2,800 cubic feet per month, a charge of 8 cents per hundred cubic feet for the next 7,000 cubic feet per month and a charge of 5.5 cents per hundred cubic feet for the gas over 10,000 cubic feet per month, with provisions for a discount, if the bill is paid within fifteen days from the billing date, of 10 cents on the first 200 cubic feet or less per month, and .5 cent per hundred cubic feet for the gas sold over 200 cubic feet per month. Thus no gas is sold at less than 50 cents a thousand cubic feet. The cost of the gas to the company in its holder is approximately 30 cents per thousand cubic feet, leaving a spread of 20 cents per thousand cubic feet for the distribution, meter reading, billing, collecting of accounts, and other expenses attached to the promotion of the sale of the gas sold under the classification. The evidence as to whether this 20-cent spread does cover these costs is somewhat unsatisfactory. The company contends that the net annual income of the company is \$200,000 larger than it would be if no gas for space heating were sold. There was sold in 1934 for space heating 1,642,378 thousand feet of gas. Estimating the cost of gas at 30 cents a thousand cubic feet, and the price at which the gas was sold at 50 cents a thousand cubic feet, gives a revenue of \$328,475 to be applied to the cost referred to. This revenue is probably

RE BOSTON CONSOLIDATED GAS CO.

somewhat higher, as the revenue exceeded 50 cents a thousand cubic feet, due to the higher price in the lower steps of the rate. The expenses in 1933, it is estimated by the company in an exhibit presented by it, other than the cost of the gas and its pumping, were \$78,745.92. We believe, from the evidence, that these costs in 1934 and in 1935 were substantially higher. Moreover, the expense figures of space heating are largely based upon allocations from the transmission and distribution, utilization, commercial, new business, and general expenses. No separate account of expenses due to space heating is kept and apparently cannot be kept because of the manner in which the company conducts its business. Consideration of new business expenses of the company for the years 1933 and 1935 leads us to doubt the accuracy of the company's estimates. In 1933 the new business expenses were \$323,563.49. In 1935 these expenses amounted to \$464,508.37, showing an increase of \$140,944.88 over those of 1933. Moreover, the increase in the maintenance of customers' installations was in 1935, \$54,095.30 more than that in 1933.

We think it obvious that these increases were largely due to increased activity of the company in the promotion of the sale of gas for space heating. The increased expenses of 1935, added to those estimated in 1933, would reduce very materially the company's estimated return from the sale of gas for space heating over the cost of the gas.

The argument of the objectors that a continuation of the company's policy is likely to throw a burden on the other users of gas is not, we think,

entirely without foundation. However, we are of the opinion that we ought not to disapprove the rate unless it appears clearly that the sale of gas under the rate will throw a burden upon other customers to whom the rate does not apply. This has not been shown by the objectors to our satisfaction. We think the service provided for in the classification can be furnished without throwing a burden on other customers. The spread of over 20 cents between the cost and the price at which the gas is sold is, in our opinion, ample to take care of the cost of reading meters, billing, collecting, and the necessary service. Additional costs to the company undoubtedly arise because of changes in the distribution system due to this class of service. The company, therefore, should limit its expenses to well within the spread between the cost of the gas and the price at which it is sold. If this is done we think the rate will not be objectionable. On the other hand, if the company's expenses are not, in the future, so limited we feel it will be our duty to order that the rate be discontinued. We do not think that we should assume that the company in the future will allow its expenses as to this class of business to be such as to throw a burden on other customers. With intelligent management it ought not to occur. We are of the opinion that the expenses relating to the business under this classification should be more definitely set out and kept by the company and if methods are not adopted by it to this end, steps should be taken by the Department to require it. We are also of the opinion that the minimum charge provided in the classification of

MASSACHUSETTS DEPARTMENT OF PUBLIC UTILITIES

\$75 a year should be increased to \$100 a year.

Accordingly, after a hearing, it is *ordered*, that Classification No. 2, filed by the Boston Consolidated Gas Company on April 28, 1936, be changed and amended so that the minimum bill per annum for gas used in space heating only shall read \$100, in place of \$75, and that the classification so amended and changed be and hereby is approved to the extent required by Chap. 365 of the Acts of 1934 (General Laws, Chap. 164, § 119), the said classification as so amended and changed to become effective August 1, 1936.

GRANT, Commissioner, concurring: While I concur in the majority opinion and order of the Commission, I am of the opinion, from the available figures with respect to the expense to the company of acquiring and maintaining customers under Classification No. 2, that such costs are excessive and result in discrimination against other users of gas, particularly against customers served under Classification No. 1.

Whether this discrimination is causing an actual burden to be thrown upon other customers at the present time is impossible to determine, due to incomplete company records. While not denying the right of the company to enter the competitive field through the use of promotional rates, I believe that such rates can be justified only when they result in revenue sufficient to pay the cost of the service under the rate, of which, in this case, a serious question exists. I am of the opinion, however, that the Department, in the absence of full informa-

tion, ought not to disapprove this rate. It should be possible to sell gas under such a rate without throwing a burden upon other users if the business is conducted intelligently. I believe that the company should be given an opportunity to demonstrate clearly that it can conduct this part of its business with the intelligence necessary to avoid throwing a burden upon other customers.

I should prefer that the order of the Department increase the minimum annual charge under Classification No. 2 from \$75 to \$125, but in concurring with Commissioners Attwill and Leary to provide a majority I feel that a part of my objection will be overcome by increasing said minimum charge to \$100 per annum. Furthermore, with the question of "new business" expenditures left open for future determination by the Department, pending an anticipated revision of policy by the company, which ought to remove any unreasonable or unjust discrimination, the Department has the power to take further steps toward correcting such discrimination as may be found, in the future, to exist.

In order that the Department may be able to reach a definite conclusion in this latter respect, I believe that the company should be required, within a reasonable time, to file with it complete information as to the cost of acquiring and servicing "new business" accounts under Classification No. 2.

MURRAY, Chairman, and HARDY, Commissioner, dissenting: The Department on January 28, 1936, *supra*, in an opinion rendered upon various petitions complaining as to the prices

RE BOSTON CONSOLIDATED GAS CO.

charged for gas by the Boston Consolidated Gas Company, and as a result of an investigation made by the Department upon its own motion, made the following statement in relation to Classification No. 2 then in effect, known as the house-heating rate:

"Rate 2 is a so-called house-heating rate. The rate is conditioned upon the customer paying \$75 per annum for gas used in space heating only, whether the customer uses that amount of gas or not. Here the conditions are not the same, as the customer is required to guarantee the payment of \$75 for gas used for space heating in order to obtain the advantages of the rate. We think, however, the rate is objectionable and that the rate should be *available to all persons using substantially the same amount of gas and who guarantee a like return, whatever the use may be to which the gas is applied*, with provision, if necessary, to insure a similar uniformity of use as that of customers having space-heating requirements."

"Where a company engages in business of a competitive nature and its earnings on the competitive business fail to produce a fair return on that proportion of the property devoted to this competitive business, in our judgment, it ought not to expect to impose the shortage of a fair return on that business on the noncompetitive business in order to obtain a fair return on the whole property."

The order of the Department issued January 28, 1936, *supra*, required the Boston Consolidated Gas Company to file a new Classification No. 2 on or before March 1, 1936, in substitution

for the present Classification No. 2, in order to remove the discrimination hereinbefore referred to. Subsequently the Department extended the time of filing said new classification to June 1, 1936. On April 28th the company filed a new Classification No. 2, effective June 1st. This new Classification No. 2 makes no change in the present schedule except as to availability. Under present Classification No. 2 it is provided that "Gas used for any purpose will be sold under this rate to any customer who uses gas to supply his major space-heating requirements," irrespective of the type of apparatus; while under the proposed Classification No. 2 it limits the availability to those customers using automatic self-acting gas appliances for their major space-heating requirements, and also using gas for their other major fuel requirements. The rate, therefore, is not available to customers who use nonautomatic appliances for space heating, even though the total amount of gas used would be the same as the consumption under the automatic self-acting appliances.

Classification No. 2 was found discriminatory, in that the rate is conditioned upon the customer being required to guarantee the payment of \$75 annually for gas used in house heating, and it was stated that the rate should be available to all persons using substantially the same amount of gas providing they guaranteed a like return, whatever the use may be to which the gas is applied.

This defect is not cured by the proposed Classification No. 2, as that restricts the use to customers having automatic self-acting gas appliances for their major space-heating require-

MASSACHUSETTS DEPARTMENT OF PUBLIC UTILITIES

ments and using gas for their other major fuel requirements, while still having to guarantee \$75 per annum for gas used in space-heating only. A customer who, for example, uses \$10 monthly, or \$120 annually, in heaters of a type consuming 10,000 to 15,000 cubic feet per month, but has no *automatic* space heater, would be restricted to Rate No. 1. Also, the customer who uses automatic gas appliances, not self-acting, for his major space heating to the amount of \$75 per year, but who may use electricity, coal, or oil for other major fuel requirements, is restricted to Rate No. 1.

On February 26, 1936, the company filed a petition for reconsideration by the Department of this order as to Classification No. 2, alleging that compliance therewith would substantially reduce the annual income of the company and that Classification No. 2 was not an unlawful discrimination. Pending hearings on this petition, the Department suspended until August 1, 1936, the operation of the proposed Classification No. 2. In support of its contention that compliance with the order would substantially reduce the annual income of the company, the petitioners offered testimony and submitted an exhibit, numbered Q-1, which set forth that such compliance would result in a total loss of revenue amounting to \$564,928.29. Exhibit Q-1 purports to show the effect on gross revenue if the house-heating rate were made available to all customers, regardless of purpose or use. It sets forth that, under Rate Classification No. 1 General, 6,057,679 hundred cubic feet of consumption would be affected; that there would be

a loss in revenue of \$242,898; and that the number of customers affected would be 8,130; that under Rate Classification No. 7, Automatic Water Heating, 5,961,346 hundred cubic feet of consumption would be affected, with a loss of revenue of \$119,587.23, and the number of customers affected 6,785; that under Rate Classification No. 3, Commercial, the consumption affected would amount to 7,362,343 hundred cubic feet, with a loss of revenue of \$153,907.17, and 500 customers affected; and that under Rate Classification No. 4, Industrial, the consumption affected would amount to 435,372 hundred cubic feet, with a loss of revenue of \$48,535.89, and the number of customers affected 102, or a total loss in revenue of \$564,928.29, and the total number of customers affected 15,517.

Representatives of customers of the company at the public hearings contended that Classification No. 2 embodied a discrimination which is unfair to customers of the company, other than those served under this classification; that the order of the Department, issued January 28, 1936, *supra*, tended to remove this discrimination and that said order should not now be changed. They further contended that the use of gas under Classification No. 2 imposed a burden upon other customers of the company to whom the rate does not apply. This contention was denied by the company. The evidence presented upon both sides of the issue was, however, in our opinion, inconclusive. We do not concur in the opinion of the majority of the Commission that the burden of proof upon such an issue is on the customers. We feel that it

RE BOSTON CONSOLIDATED GAS CO.,

is the duty of the company in the present proceeding to present satisfactory evidence that customers served under other rates are not burdened by Classification No. 2, and, in our opinion, the evidence presented in relation thereto is unsatisfactory and insufficient.

In view of the figures shown on the foregoing exhibit, we feel that we should call attention to certain phases of the house-heating service. In 1932, under Classification No. 2, the company sold 1,269,264 thousand cubic feet of gas, while in 1935 it sold 2,000,136 thousand cubic feet, or an increase of 730,872 thousand cubic feet. The revenue derived therefrom in 1932 amounted to \$921,081.14, while in 1935, it was \$1,126,279.15—an increase over the year 1932 of \$205,198.01. The number of house-heating customers in 1932 was 1,600 and in 1935 approximately 3,000, or an increase of approximately 1,400. Presumably this increase in

vertising for "new business" in 1932 was \$89,478.78. In 1935 it had risen to \$133,728.79. From these figures it appears that the expense of acquiring new business in 1932 was \$310,135.33, as against \$464,508.37 in 1935.

No figures are available by which to determine accurately what portion of this "new business" expense should be charged to house heating, representatives of the company having stated at the public hearings that they had made no detailed estimate of separate costs. This is due to the fact that the company does not have figures available to accurately determine the allocation of "new business" expense to house heating. We feel that the expenses relating to Classification No. 2 should be more definitely set out in the books of the company. However, it appears that in 1933 and 1934 there was an allocation of "new business" expenses applicable to house-heating customers, as follows:

Under Acct.	1933	1934
G-662 New business salaries		
Salaries of house-heating department	\$17,897.96	\$97,435.49
G-663 New business expenses		
Expenses of house-heating department	1,822.41	6,520.46
Total	\$19,720.37	\$103,955.95

customers does not represent entirely the addition of new customers, but includes some users of gas who already were being served on other rates.

In 1932 salaries paid by the company under the heading of "new business" amounted to \$191,736.08. In 1935, \$290,542.51 was charged to this item. In 1932, \$28,920.47 was charged to "new business" supplies and expenses, while in 1935 this item totaled \$40,237.07. The cost of ad-

This indicates an increase in house-heating salaries and expenses in 1934 over 1933 of \$84,235.58. As we analyze the evidence, however, it does not appear that these figures include any of the expense for advertising. Any analysis tending to show the expense for "new business" applicable to house-heating customers in 1933 and 1934 should, we think, include a substantial addition to these figures, representing the proportion chargea-

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ble to this type of business of the increase in the amount spent for advertising between 1932 and 1935.

Representatives of the company testified that, in their judgment, the company received an additional net income of approximately \$200,000 per year from this type of business, yet they likewise testified that they do not know the actual cost of securing house-heating customers.

The figures show a constant increase in the annual cost of obtaining new business. Comparing these expenses with the increase of \$205,198.01 in revenue for the 4-year period (1932-1935) leaves a serious question, so far as may be determined from the evidence, as to whether customers served under Classification No. 2 are paying their proportionate cost of service.

There was considerable testimony as to the need for establishing rates of a promotional character to increase the use of gas and to meet competition, which has become a serious problem in the gas industry. While this may be true, we think discrimination ought not to be permitted between customers who receive substantially the same service under similar conditions. Upon a petition of the selectmen of the town of Nantucket for a reduction in the prices charged for gas and electricity sold and delivered by the Nantucket Gas and Electric Company the Department, in a unanimous decision, made on July 31, 1934 (D. P. U. 4646) made this statement:

" . . . Rates such as the company maintains tend to discourage use. A policy of furnishing electricity at lower rates, where the customer makes a

larger use thereof, may well result in the end in a larger revenue to the company, thus making it possible to reduce further the rates. We think it plain that the management is of this opinion, as they have voluntarily established a rate, designated "Rate 4—Commercial Power," where the initial charge is 13 cents per kilowatt hour, with a minimum charge of \$1 per month per horsepower or less of installed capacity. *We see no reason why this rate should not be open to all irrespective of the use to which the electricity may be devoted.* If the company can afford to sell electricity to a customer who uses it for power upon the terms prescribed, it can afford to sell it to the householder or to the storekeeper on this basis for light, heat, or power. *We think this rate should be open to all irrespective of the use to which the electricity is applied. . . .*"

We see no substantial difference in the problem presently before us, except in so far as the commodity discussed in the former case is electricity and the one in the present case is gas. We are of the opinion that what the Department said in the Nantucket case as to use applies equally to the issue in the present case. We are of opinion that there are users of gas for certain purposes other than house heating whose consumption is as continuous and uniform as that of house-heating customers. In considering the company's contention relative to the necessity for meeting competition from other fuels, it is important to bear in mind that the stock of the Boston Consolidated Gas Company is now owned by the Eastern Gas & Fuel Associates. The Eastern Gas &

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Fuel Associates is engaged not only in the manufacture of gas, coke, and other residuals, but in the transportation and sale of coal. To a certain extent, therefore, it would appear that the Boston Consolidated Gas Company is in competition with itself, or, at least, with the controlling parent company. We feel that the small household consumers of the Metropolitan area are entitled to some consideration. If the company must meet competition by reducing its rates below an amount necessary to earn a fair compensatory return on its investment, we see no reason why the burden should not be equitably distributed over the entire gas consumption market.

The present and the proposed Classification No. 2 provides that this rate shall be available to customers whose minimum consumption of gas for space heating only is \$75 per year. This enables customers using gas for house-heating purposes to use gas for but one or two months of the year for house heating and yet, despite such limited use, obtain gas for their

general requirements at a rate much cheaper than is available to the great majority of the company's other customers, many of whom also use gas to a value in excess of \$75 per year. We think that the minimum annual charge for customers served under Classification No. 2 should be increased to \$125 per year. It may be pertinent to point out here that prior to 1934, the minimum charge under Classification No. 2 was \$100. With this increase to \$125 in the minimum charge and a curtailment of "new business" expenses, which we feel can be accomplished, the alleged loss in revenue would be largely overcome.

The opinion and order of the Department hereinbefore referred to was issued after many hearings, a study of the testimony and careful consideration thereof. It was then found by the Department that discrimination existed, which discrimination the Department ordered removed. We do not feel that sufficient new evidence has been brought to our attention to convince us that we ought to change our views at this time.

NEW YORK DEPARTMENT OF PUBLIC SERVICE, STATE DIVISION, PUBLIC SERVICE COMMISSION

Re New York Telephone Company

[Case No. 8230.]

Rates, \$ 640 — Immediate reduction — Cost of extended proceeding.

1. Savings which can be effected by termination of a rate proceeding might better be applied to the benefit of subscribers through an immediate reduction in rates, when there is sufficient evidence in the record to warrant an order making an immediate reduction, instead of continuing the proceeding to a final and complete determination which would require a long time and

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a large expenditure of money which, while presently paid by the company, must ultimately be borne, in part at least, by subscribers, p. 446.

Depreciation, § 23 — Annual allowance — Losses on retirement.

2. It is inequitable to require telephone subscribers to pay as depreciation expense over the entire life of the property more than the actual loss sustained when the property is retired, p. 449.

Depreciation, § 26 — Annual allowance — Excessive reserve.

3. The proper basis upon which to fix an annual rate of depreciation when the accumulated reserve is excessive is to make it such that over the remaining life of the property a sufficient additional amount will be accumulated so that the reserve at the time of retirement will equal the loss sustained at that time, p. 449.

Rates, § 532 — Telephone — Reductions — Method.

4. Base station rates were not reduced for the reason that a reduction of substantial benefit would have such a large revenue effect as to bring about an amount of decrease in the net revenue which seemed unjustified, although reductions were required in various charges, p. 453.

Rates, § 541 — Telephone — Interzone charges.

5. Interzone telephone charges in a large city were not eliminated where the cost of rendering service between distant portions was considerably more than the cost between subscribers immediately adjacent to each other, p. 453.

Rates, § 558 — Telephones — Hand-set charge.

6. Hand-set charges of a telephone company were reduced from 15 cents to 10 cents monthly, p. 454.

Rates, § 309 — Connection charges — Telephones.

7. Service connection, move, and substitution charges of a telephone company, although alleged not to cover the cost of negotiations, the establishment of records, and other uncanceled costs, should be reduced when they operate as a barrier to the more widespread development of telephone service and reductions will be in the interest of the service in general, p. 454.

Rates, § 584 — Telephones — Extended area service.

8. An extended-area service on an optional basis was approved to satisfy the demands of customers using tolls to near-by districts without the necessity of raising rates to all customers, where constant growth in population had resulted in the expansion of telephone interests of many customers beyond the local service areas established, p. 454.

Rates, § 532 — Telephones — Municipal boundaries — Overlapping service areas.

9. Theoretical central offices with overlapping service areas along a large portion of a municipal boundary were approved where, as a result of rapid growth of sections immediately adjacent to a municipality, a situation had developed which had produced a toll charge between nearby subscribers on opposite sides of the city line, p. 455.

Rates, § 553 — Telephones — Temporary suspension of service.

10. Charges for residence telephone service during temporary suspension were reduced to an amount equivalent to the "in place" service connection charge for the first month with a nominal charge of 50 cents added for each month thereafter to compensate the company in part for reserving

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the central office and outside facilities together with the call number for the subscriber's future use, the minimum period to be for one month and the maximum for six months, p. 455.

Rates, § 570 — Telephones — Seasonal service.

11. A minimum charge for seasonal telephone service equivalent to the schedule rate for seven months, although possibly justified on the basis of cost, was reduced to five times the monthly rate in consideration of the general public opinion that the present seasonal charge was excessive, p. 456.

Rates, § 565 — Telephones — Semi-public service.

12. The Commission approved the waiver of coin box rental where receipts equal or exceed \$25 per month, p. 456.

Rates, § 553 — Telephones — Tie line charges — Differential.

13. A differential in tie line charges between the charge for a tie line connecting switchboards of the same subscriber and the charge for a tie line of different subscribers should be eliminated, although the differential may be sound from a rate standpoint, when the reason for the distinction has been difficult for the public to recognize and has occasioned a number of complaints, p. 457.

[June 26, 1936.]

PROCEEDING on motion of Commission as to rates, charges, rentals, and tolls of a telephone company; rate reductions ordered.

APPEARANCES: Charles G. Blakeslee, Counsel, Public Service Commission; Edward L. Blackman, Trial Counsel, New York Telephone Company; Charles T. Russell, General Counsel, New York Telephone Company; Edward W. Beattie, General Attorney, New York Telephone Company; Paul H. Burns, Attorney, New York Telephone Company; Paul Windels, Corporation Counsel (by Harry Hertzoff, Assistant Corporation Counsel), city of New York; George L. Grobe, Corporation Counsel (by Fred C. Maloney, Assistant Corporation Counsel), city of Buffalo; R. D. Carlson, Telephone Economy Counsel; E. L. Robertson, Corporation Counsel, city of Syracuse; Leonard G. McAneny, Corporation Counsel, city of Yonkers; Oliver K. King, Corporation Counsel, Portchester; Bar-

tholomew F. Mannion, Trustee, village of Dobbs Ferry; William R. Condit, Corporation Counsel (by Samuel Faile), White Plains; Stanley W. Church, President, New York State Association of Public Officials; John A. Bodmer, Assistant Corporation Counsel, New Rochelle; Alonzo C. Lowenstein, First Assistant Corporation Counsel, Mount Vernon; Charles M. Carter, First Deputy County Attorney and John M. Krug, Deputy County Attorney for William A. Davidson, County Attorney, county of Westchester; Herman H. Baer, Mayor, New Hyde Park; Daniel E. Kelly, Village Attorney, Rye; Benjamin D. Levenstein, Attorney (representing Wakefield Fusion Club, Alherton Merchants Association); Paul J. Tomako, Mayor, Lackawanna; Harold F. Mason, Mayor, Glen Cove;

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Rudolph S. Weinstein, Corporation Counsel, Lackawanna; Frederick Hitcherick, Councilman, town of Hempstead; Herbert H. Hall, Corporation Counsel, Tarrytown; Salvatore T. Gambino, Attorney for village, Peekskill.

BREWSTER, Commissioner:

General Statement

This investigation of the rates, charges, rentals, and tolls of the New York Telephone Company was commenced on motion of the Commission in May, 1934. The proceeding was instituted in consideration of the Commission's studies of the company's operations and of complaints by subscribers, particularly against the rates and charges for miscellaneous services and facilities and against toll rates for relatively short distances.

The first hearing was held on May 10, 1934. Since that time there have been ninety-one days of hearings, 141 witnesses have testified, 417 exhibits have been presented, and 11,540 pages of record taken.

The evidence thus far presented includes the book cost of the company's property, the estimated reproduction cost of a portion of the company's property, analyses of the company's past revenues and expenses, and extensive testimony as to the annual expense of depreciation. The current hearings are for the purpose of continuing the receipt of evidence as to the reproduction cost of property.

[1] As hereinafter outlined, it appears that there is sufficient evidence in the record at the present time to warrant an order making an immediate reduction in rates.

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To continue the proceeding to a final and complete determination will require at least two years and cost a considerable sum. I doubt whether the conclusion which would then be reached would vary materially from that which can be made upon the evidence now before the Commission.

It is reasonable to assume that the presentation of the company's direct case will take another year of hearings, and in the meantime the Commission, under the provisions of § 18-a of the Public Service Law, has had and will have engineers and accountants engaged in the analysis of the company's records and accounts and in the preparation of data to be later presented as part of the Commission's direct case. A spot check of the inventory and appraisal testimony of the company alone amounts to a tremendous undertaking, not only as to the number of engineers and accountants required, but the time necessary to make any effective check. Bearing in mind the cost of valuation work done by other utilities in the state of New York, a reasonable estimate of the total cost of this rate investigation would be upwards of one million dollars. The cost of the proceeding, while presently being paid by the company, must ultimately be borne, in part at least, by subscribers. I believe that the savings which can be effected by the termination of the proceeding might better be applied to the benefit of subscribers through an immediate reduction in rates.

Valuation of Property

The record contains evidence as to the book cost of the company's property. A very large percentage of the

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company's property was constructed by it. For this major portion book cost and original cost are the same. It appears that the difference between the book cost and original cost of the remaining portion is so small when considered with the entire property that the book cost of property may be taken practically as representing original cost.

The following bears out this conclusion:

(a) Retirements have been made at average book cost instead of at the specific cost of the items retired throughout most of the company's history. This has resulted in some cases in reducing book cost below original cost and had the opposite effect in others. For a long period after the war, the general effect of such retirement accounting was to diminish the book cost below actual cost. However, it is not probable that the resulting error is material as compared with the total present cost of plant.

(b) Items returned to the storeroom for reuse have been repriced at current costs new instead of original cost. During a considerable period after the war, the result of this was to increase book cost above actual cost. However, this error has been largely offset by the opposite error under (a) above. It is not likely that the net result to date is materially wrong with regard to the total present cost of property.

(c) Data regarding property purchased since 1914 at other than original cost are summarized in Exhibit 73, Table 225. (Reliable data for earlier years are not available.) Excluding A. T. & T. transactions, the

total so charged to tangible fixed capital has been \$2,867,808, most of which was involved in the Federal purchase of 1918. Original cost of this is not known, but it seems obvious that the possible error thus thrown into present book cost is comparatively small.

(d) Property purchased from A. T. & T. (principally in 1925 and 1927) was entered at \$12,779,237 total in New York Telephone fixed capital (Table 225, Column 4), as compared with \$13,371,859 book cost to the A. T. & T. Company (Column 6). This difference of about 4 per cent on the property involved is altogether insignificant compared with the company's total property.

The company has presented in evidence an inventory of its property and now is engaged in the presentation of an estimate of its reproduction cost. The completion of evidence as to reproduction cost of property will consume the major part of the balance of the time required to complete the case.

Reproduction cost figures already submitted are in some instances less, and in other instances greater, than book cost. The evidence is as yet insufficient as a basis for a definite estimate of the final outcome. It is quite probable that the reproduction cost of the whole property will be below the book cost, but I do not believe it will be so far below as to affect materially the allowance for fair return. No injustice is likely to be done, therefore, either to the subscribers or to the company by using book cost less depreciation in arriving at a tentative rate base.

The book cost of plant and proper-

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ty as of December 31, 1935, amounted to \$752,247,283. Increases in property have been small during the past several years but with the expected increase in business should be somewhat larger in 1936. It is estimated, therefore, that the average property during 1936 will amount to approximately \$755,000,000, an increase of about one half of one per cent over the 1935 average.

The depreciation reserve at December 31, 1935, was \$229,155,601. The net growth in the reserve during the past two years has been about \$16,000,000 annually. With the lower annual depreciation rate adopted for 1936, the corresponding net increase in the depreciation reserve will be only about \$14,000,000, assuming retirement losses approximately equal to those of the two prior years. Adding one half of this amount to the depreciation reserve as of December 31, 1935, produces \$236,000,000 as an estimate of the average for 1936.

Analyses of depreciation reserve requirements indicate that such requirements based on the 1935 rate of 4.50 per cent were approximately equal to the reserve. A reduction in the annual depreciation rate to 4.18 per cent (as hereinafter explained) indicates that there is some \$25,000,000 more in the depreciation reserve than required. Eliminating this \$25,000,000 of excess leaves \$211,000,000 as the estimated average depreciation reserve requirement for the year 1936, consistent with the new annual depreciation rate of 4.18 per cent. Deducting this amount from the estimate of \$755,000,000 of average property for the year 1936 leaves \$544,000,000 as the depreciated value

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of property. To this should be added working capital and whatever additional allowance is made for going value.

Complete data for computing working capital are not available in the record. In the statutory court decision of December, 1929, the amount allowed for working capital represented somewhat in excess of \$7 per station. Applying this figure to the average number of stations in 1935 gives \$16,500,000. In 1936 the working capital allowance on this basis would be \$17,000,000 in round figures. This, I believe, is an outside amount and would be reduced upon thorough investigation. However, a reduction in this item would not have a great effect. An allowance for working capital equivalent to \$5 per station would reduce the rate base less than \$5,000,000, or less than 1 per cent.

The allowance made by the court for going value, and included in the Commission's rate determination of 1930, was \$10,000,000.

The sum of the foregoing is \$566,000,000 which may be taken as a tentative rate base, based on book cost, for the year 1936.

This is not to be taken as a final and definite finding by the Commission such as would be made at the conclusion of the proceeding if all evidence had been submitted, but is an approximation only. It is, I believe, a reasonable estimate upon which to base a decision at this time.

Revenues and Expenses

Starting with 1933, in which year the gross revenues of the company showed the full effect of the depres-

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sion, gross revenues have increased gradually but operating expenses also have increased and the increase in net income does not seem to be in proportion to the improvement in business generally.

The largest increases in expenses have been caused by a restoration of seniority pay increases and in taxes. During the depression period the company abandoned temporarily its policy of seniority pay increases but restored them later. In the two years, from 1933 to 1935, taxes increased \$4,500,000, or 30 per cent, and it is evident that taxes will increase materially further in 1936 and subsequent years.

The following tables show the company's gross revenues, expenses, and net income as reported for the years 1933, 1934, and 1935:

	1933	1934	1935
Revenues	\$183,400,445	\$185,928,657	\$188,815,593
Expenses	\$ 99,818,870	\$101,725,554	\$104,718,774
Depreciation	34,264,387	31,611,408	31,462,720
Taxes	15,534,566	18,300,438	20,040,289
Total	\$149,617,823	\$151,637,400	\$156,221,783
Net income	\$ 33,782,622	\$ 34,291,257	\$ 32,593,810

[2, 3] By far the largest item of operating expenses is the annual provision for depreciation. This has amounted in recent years to more than \$31,000,000 annually. Through these annual accruals a reserve is built up to cover the loss sustained when property has served its useful life and is retired. The amount annually set aside is so computed as to spread the ultimate retirement loss uniformly over the life of the property. Comparatively little property remains in service until it is worn out. In times of rapid expansion many items of property must be replaced by units of greater

capacity to meet service demands while the replaced items still are serviceable. Prior to the depression this was an important factor in providing for depreciation. However, as a result of the depression it is probable that, as a general rule, property will remain in service longer. With this lengthening of the service life of property a longer period results in which to provide for the retirement loss.

Due to this change in the depreciation outlook brought about by the depression, the amount annually set aside has received extensive attention in this proceeding.

The company has presented evidence as to annual depreciation expense resulting in an average rate on depreciable property of about 4.50 per cent, which was the average rate ac-

tually used in 1935, as compared with about 5 per cent approved in the court case and effective in the years 1929 to 1933 inclusive. It has also practically completed its evidence as to depreciation reserve requirements, indicating that the depreciation reserve consistent with the 4.50 per cent rate was, in round figures, \$207,000,000 on July 1, 1934, as compared with a book reserve of \$205,000,000. In other words, the reserve and reserve requirements were practically the same, assuming the correctness of the 4.50 per cent annual rate supported by the company's testimony.

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Following the practice of the Commission in the past, this would require the deduction of the full reserve from the book cost in determining the rate base, providing the company's annual rate were accepted.

The company's claimed depreciation rates, however, violate the Public Service Commission and Federal Communications Commission accounting rule forbidding present amortization provision for future property (in central offices and buildings). The company objected to the rule, nevertheless, it has now (as of January 1, 1936) placed in effect new and reduced rates purporting to comply with the rule (4.18 per cent average, as compared with about 4.50 per cent formerly claimed and applied in 1935). This effected a reduction of about \$2,300,000 in operating expenses.

However, such change necessitates a revision in the computation of depreciation reserve requirements. Detailed computation is complicated, but a rough estimate may be made on the basis of exhibits in evidence, from which it is estimated that the reduction in reserve requirements would amount to about \$25,000,000. Since the reserve and reserve requirement were found formerly to be substantially equal, this means that the reserve requirement under the new rate is about \$25,000,000 less than the actual reserve.

No evidence other than the company's on annual depreciation has yet been submitted. Cross-examination, however, has developed some serious doubt as to whether the company's new and reduced rates give full and proper effect to the longer life of

property due to the changed conditions brought about by the long depression and the consequent drastic reduction in growth, as compared with the long history of rapid and continuous growth before 1930. This past history was the main factor in making the forecasts on which the company's rates are based. Based on the same lives and salvage values as used by the company in determining its present composite average rate of 4.18 per cent, there is an excess in the depreciation reserve of approximately \$25,000,000. If this composite rate is too high the excess in the reserve is even greater.

Obviously, it is inequitable to require the subscribers to pay over the entire life of the property more than the actual loss sustained when the property is retired. This being so, the proper basis upon which to fix an annual rate of depreciation is to make it such that over the remaining life of the property a sufficient additional amount will be accumulated so that the reserve at the time of retirement will equal the loss sustained at that time.

The record does not contain a basis for fixing this rate exactly and can not show it without extensive testimony by the Commission's experts, presumably followed by cross-examination and rebuttal on behalf of the company.

I believe that the present rate of 4.18 per cent is higher than required under existing conditions and should be reduced appreciably until increased service demands indicate the advisability of increasing the depreciation expense rates so reduced. The company should file promptly with the

Commission new and revised rates in substitution for the existing rates.

Earning Trend and 1936 Estimate

The present trend of revenues is upward. The company's statement for the first three months of 1936 shows a gain in gross revenues (minus uncollectibles) of \$3,063,787. On account of leap year, this included one more day than the first three months of 1935, and making adjustment for this fact, an increase of \$10,000,000 in round figures may be expected as compared with 1935, if this upward trend is maintained throughout the remainder of the year.

The company makes forecasts or estimates of its future revenues in the regular course of its business. These provisional estimates are revised from time to time, in view of actual operating results.

The sitting Commissioner notified the company of his intention to recommend to the Commission a reduction in rates in this proceeding and asked the company for its latest corrected provisional estimate as to increase in revenues in 1936 over 1935. The estimates based upon factors which are said to have proved reliable in the past are \$7,200,000. Since an estimate of future income is only an informed guess, particularly during these times of changing and uncertain business conditions, we think that the company should have given more weight to the facts hereinbefore set forth, in which an estimate of \$10,000,000 was arrived at.

In view of the circumstances and for the purposes of this memorandum, an estimate of revenue increase of 1936 over 1935 will be taken at

\$8,500,000. Expenses (excluding depreciation) show a marked upward trend due principally to the resumption of seniority pay increases which were suspended for two years or more prior to 1935. The total increase in expenses of 1935 as compared with 1934 was about \$3,000,000, with no substantial increase in telephone plant and telephone business. With a substantial gain in gross revenues forecast for 1936, it is likely that the increase in expenses will be greater in 1936, and we have taken \$4,000,000 as an approximate estimate for such increase. Certain other factors will probably contribute to this increase, such as increased accounting cost due to the new accounting system effective January 1st, of this year. Annual depreciation would normally increase slightly due to net additions to telephone plant. Such increase, however, should be less than \$200,000. A large change, heretofore discussed, will occur in annual depreciation due to the Commission's new accounting rule which forbids the present accrual of depreciation charges on account of short-lived property to be installed in existing central offices in the future. The company's compliance with this rule has reduced its annual depreciation rates by about \$2,300,000 per year, effective January 1, 1936.

Taxes have increased very greatly in each of the past several years. Such increase amounted to nearly \$3,000,000 in 1934 as compared with 1933, and \$1,740,000 in 1935 as compared with 1934. The company's own calculations for 1936 are reflected in its statement for the first three months, which indicates an increase of about \$3,800,000 for the year as compared

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with 1935, under tax laws, assessments, and rates now in effect.

The foregoing estimates can be summarized:

mination. Among these are license payments to the American Telephone and Telegraph Company and Western Electric Company prices for appa-

	With Depreciation Rates on 1935 Basis			1936 Estimate with Depreciation Reduced to 4.18% per Accounting Order.
	1935 Actual	Add	1936 Estimate	
Revenues	\$188,800,000	\$8,500,000	\$197,300,000	\$197,300,000
Expenses	\$104,700,000	\$4,000,000	\$108,700,000	\$108,700,000
Depreciation	31,500,000	200,000	31,700,000	29,400,000
Taxes	20,000,000	3,800,000	23,800,000	23,800,000
Total	\$156,200,000	\$8,000,000	\$164,200,000	\$161,900,000
Net	\$ 32,600,000	\$ 500,000	\$ 33,100,000	\$ 35,400,000

The foregoing figures indicate an estimated net gain in revenue in 1936 of \$8,500,000 and in actual expenses and taxes of \$8,000,000 producing a net gain in earnings of \$500,000. When the \$2,300,000 change in annual depreciation is taken into account the gain in net earnings becomes \$2,800,000, giving net earnings of \$35,400,000 available for return in the year 1936. The \$3,800,000 of tax increase is subject to change in case present tax laws are revised. There is also the possibility of an additional tax due to New York city's present effort to collect certain sales and excise taxes not heretofore provided in company tax accruals and now in litigation. These additional taxes for the year 1936 are estimated at \$1,500,000. In addition, there are unaccrued taxes of a similar nature for 1934 and 1935 of \$1,800,000. As definite liability has not been established, no consideration has been given to these taxes in the estimate of income set forth.

There are other matters, not yet covered in the record, which might have some bearing on the final deter-

mination. It is possible that a thorough investigation of the first might result in some reduction in operating expenses and of the second in a reduction of the rate base. Operating in the opposite direction, however, are certain further increases in taxes and in unemployment insurance costs for which no allowance has been made in arriving at the present determination.

Conclusion

As has been pointed out the net earnings during 1936 are estimated at \$35,400,000 with the annual depreciation accrual computed at 4.18 per cent. In view of the excess now existing in the depreciation reserve a reduction should be made in the annual depreciation rate. The reduced annual depreciation rate, together with the stimulation of business, which customarily follows reductions in the rates and charges for service, as herein proposed, should increase net income sufficiently to provide, after giving effect to the gross reductions of approximately \$4,000,000 herein proposed, a reasonably adequate return,

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under existing conditions, upon the rate base estimated from the facts now in the record.

[4] In preparing the proposed rate schedules attached hereto special consideration has been given to rates and charges which have given rise to most complaints. Base station rates have not been reduced for the reason that a reduction of substantial benefit would have such a large revenue effect as to bring about an amount of decrease in the net revenue which seems unjustified. A reduction of but 25 cents per month in main station rates alone, would absorb all of the apparent possible reduction of approximately \$4,000,000.

[5] At the hearing on June 18th several complainants requested that the Commission abolish all interzone rates within the city of New York. This suggestion is not new to the Commission and has been the subject of study and consideration. Because of the extent of the territory included within the city of New York and the great diversity of interest between the outlying portions and the central portions the traffic problems in telephone communication are both diverse and complex.

The cost of rendering telephone service between distant portions of the city of New York is considerably more than the cost between subscribers who are immediately adjacent to each other. If a single rate is to be charged for all classes of such service, it means that the charge for certain service being inadequate must be made up by excessive charges to others. Where the difference between the cost of the various services rendered for a uniform charge is not large, this may

be a proper method in order to eliminate multiplicity of rate schedules and diverse charges, but we are not of the opinion that conditions in the city of New York are now such that the elimination of all interzone charges and the results which inevitably follow such an elimination would be warranted.

These proposed rate reductions will accomplish the most comprehensive reductions in telephone charges since the Commission's order of January 25, 1923 (P.U.R.1923B, 545). They will save \$4,000,000 per year for subscribers. Continuance of this expensive rate proceeding will deprive subscribers of that amount annually for two or three years. Without anticipating legal proceedings, past experience indicates that subscribers will save from eight to twelve millions if these rates become effective. If the company's business improves in the future and its net income increases sufficiently, further action can then be taken toward just and proper additional relief for subscribers.

I recommend the adoption of an order requiring the company to make, on or before July 25, 1936, proper filings to carry out the changes in schedules appended hereto; the service connection charges and toll rates to become effective on August 1, 1936 and all other rates and charges to become effective on the first billing date on or subsequent to August 1, 1936, except two-party service in zones 1 and 2 Manhattan which is to become effective not later than March 1, 1937. This latter service cannot become effective at once because the required facilities are not installed.

All concur.

NEW YORK DEPARTMENT OF PUBLIC SERVICE

Proposed Rate Reductions

There follows a list of the proposed rate reductions showing the revenue effect of each. These reductions have a total revenue effect of \$4,152,000. Following the summary each of the proposed changes is described. [List omitted.]

Hand-set Charge

[6] A reduction from 15 cents to 10 cents is proposed in the additional monthly charge for hand telephones to all subscribers as a step in the ultimate total elimination of the hand-set charge. It is recognized that when the use of hand telephones becomes substantially universal, there should be no additional charge. A reduction in the hand-set charge to 10 cents will affect all of the subscribers having hand telephones (about 1,200,000 stations) and will result in a saving to such subscribers of somewhat over \$760,000 per year.

Service Connection Charges

[7] A general and substantial reduction in service connection, move and substitution charges is proposed. On the following page there is set forth in detail the present schedule of these charges, the proposed schedule and the resulting reductions. While it is alleged that the present charges do not cover the cost of negotiations, the establishment of records, and other uncapitalized costs, it is believed that they operate as a barrier to the more widespread development of telephone service and that the proposed reductions will be in the interest of the service in general. These reductions will result in a decrease in charges to

14 P.U.R. (N.S.)

all of the more than 1,300,000 subscribers to telephone service throughout the state who make changes in their service and will effect a reduction in revenue of about \$782,000 per year. [Table omitted.]

Extended Area Service

[8] The constant growth in the population of Nassau and Westchester counties during the last decade has resulted in the expansion of telephone interests of many customers beyond the local service areas established some time ago. To recognize this condition by extensions of the present local service areas would involve general increases in rates to all customers, a majority of whom would not be interested in the additional service.

It is proposed to introduce an extended area service on an optional basis which will satisfy the demands of the customers using tolls to nearby districts without the necessity of raising rates to all customers. It is anticipated that the introduction of extended area service will reduce telephone charges of approximately 15,000 customers and result in an annual reduction in revenue to the company of more than \$425,000.

The proposed extended area service comprises generally all offices within the normal local service area together with those offices to which the toll rate is 5 cents or 10 cents, and certain contiguous offices to which the toll rate is 15 cents. This service is in addition to the present normal service which will be continued at the present rates. There follows a statement showing the exchanges in which extended area service will be offered together with the rates and the local

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service areas for the extended area service: [Table omitted.]

New York City Boundary—Overlap

[9] As a result of the rapid growth of the sections immediately adjacent to the New York city line, a situation has developed which produces a toll charge between nearby subscribers who are on opposite sides of the city line. This condition has been met by the establishment of theoretical central offices with overlapping service areas along a large portion of this boundary. It is proposed to continue the present arrangement and to extend it so that there will be overlaps all along the city line, thereby eliminating all toll charges between subscribers in their immediate vicinity. These overlaps will be introduced without any increases in rates and will reduce the present telephone charges of a large majority of the more than 35,000 subscribers involved to the extent of about \$20,000 per year.

Temporary Suspension of Residence Service

(House Closed)

[10] Under this provision the subscriber's complete equipment, including the installation on his premises, circuits to the central office and associated central office equipment, remain intact during the suspension period. His call number or numbers are reserved and directory listings are continued so that upon the subscriber's return service can be restored on very short notice. This privilege is utilized by subscribers to a large extent during the summer season or other periods in the year when they are away for one month or more.

The present charges for this service are one-half the monthly rate for the period of suspension. It is proposed to reduce this charge to an amount equivalent to the "in place" service connection charge for the first month with a nominal charge of 50 cents added for each month thereafter to compensate the company in part for reserving the central office and outside facilities together with the call number for the subscriber's future use. The minimum period is for one month and the maximum for six months.

Such a plan would make it easier for the 65,000 subscribers who now utilize this provision to have the benefits of temporary suspension of service and they will save in excess of \$215,000 per year.

Short-haul Toll Rates (Intrastate)

As will be seen in the following table the present schedule of toll rates for distances up to 40 miles consists of four 6-mile steps followed by two 8-mile steps. It is proposed to make the first two steps 8 miles each, followed by four 6-mile steps.

A comparison of the present and the proposed schedules follows:

Present			Mileage Steps
Miles	S-S Day Rate		
0-6	10¢		6 miles
6-12	15¢		6 "
12-18	20¢		6 "
18-24	25¢		6 "
24-32	30¢		8 "
32-40	35¢		8 "
Proposed			Mileage Steps
Miles	S-S Day Rate		
0-8	10¢		8 miles
8-16	15¢		8 "
16-22	20¢		6 "
22-28	25¢		6 "
28-34	30¢		6 "
34-40	35¢		6 "

NEW YORK DEPARTMENT OF PUBLIC SERVICE

As an example of what the proposed schedule will accomplish, in the present 15 cent step 650 rates will be reduced to 10 cents, 29—15 cent rates that have been complained of will be reduced to 10 cents and 10 of the 14 special 10 cent rates will become standard. The reductions in the 35-cent step will be similar to those in the 15-cent step, while the number of reductions in the 20-cent, 25-cent and 30-cent steps will be even greater.

The introduction of the proposed schedule will reduce the revenue of the New York Telephone Company \$1,360,000.

The New York Telephone Company is authorized by its connecting companies to include their toll rates in its toll tariff filed with this Commission. Such companies may desire to make changes in their toll rates consistent with the toll rates herein prescribed. Provision should be made so that such changes may be included in the filing made pursuant to the order in this proceeding.

Extension Stations—Residence

Residence extension and P. B. X. stations are now provided at a monthly rental of 75 cents in connection with flat rate service and 65 cents with message rate service.

A reduction of 15 cents per month on all residence extension and P. B. X. stations to 60 cents per month for flat rate service and 50 cents per month for message rate service is proposed and would save some 125,000 subscribers about \$260,000 per year.

Season Service

[11] The present minimum charge for season service is the schedule rate 14 P.U.R.(N.S.)

for seven months. While it is alleged that this minimum charge can be fully justified on the basis of cost, it is proposed that the charge be reduced to five times the monthly rate in consideration of the general public opinion that the present season charge is excessive. In proposing this reduction consideration also is given to the fact that most subscribers to season service are also subscribers to year-round service at some other point.

A reduction of the season service charge from seven to five times the monthly charge will affect 12,000 subscribers and reduce the company's revenue by about \$75,000 per year.

Semi-public Telephone Service

[12] The rate for semi-public telephone service consists of two parts; first, the fixed monthly charge for the coin box equipment, which, in New York city, is \$3, and second, the charge for messages at the public telephone rates with a daily guarantee in local message revenue which the subscriber makes up in case the collections in the box for local calls do not equal the guaranty. This class of service is utilized by subscribers who have a need for coin box service at locations which do not qualify for public telephones. In some cases the receipts from such public telephones are quite heavy and the subscriber frequently feels that under those conditions he should not be required to pay the monthly rental for the coin box. In deference to this view it is proposed that the coin box rental be waived when the receipts equal or exceed \$25 per month. This proposal will benefit about 1,500 subscribers and reduce

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their charges by about \$35,000 per year.

Added Charges on Tie Lines

[13] Tie lines are circuits between private branch exchange switchboards, either of the same subscriber or different subscribers. The charge for tie lines consists of a mileage charge based on distance, plus a charge of \$1 for each tie line connecting switchboards of the same subscriber and \$2 for each tie line connecting switchboards of different subscribers.

It is stated that while this differential is sound from a rate standpoint, the reason for this distinction has been difficult for the public to recognize and has occasioned a number of complaints. It is proposed, therefore, to eliminate this differential by making the added charge of \$1 per tie line in all cases. This proposed charge will affect about 4,000 subscribers and reduce the company's annual revenue about \$85,000.

Two-party Residence Service in Zones 1 and 2 Manhattan

Throughout New York city except in zones 1 and 2, Manhattan, a 2-party message rate residence service is offered. There appears to be only a limited demand for this service especially in zones 1 and 2 and the development throughout the city is small.

There are, however, doubtless some prospective customers in zones 1 and 2 who would be benefited were a 2-party residence rate offered. It is, therefore, suggested that such service be offered at the prevailing rates for comparable service in the other central zones. Since the same rate is to be used, its introduction will not dis-

turb the general situation with respect to rate schedules in New York city.

Only certain offices are now equipped with the necessary apparatus to provide such service. It is anticipated that within nine months at an annual cost of \$160,000 the service may be furnished. It is estimated that with this service available the gross revenues can be increased by \$100,000 which leaves a deficit of \$60,000 annually.

In view of the equipment situation, it is thought that the service cannot be offered before March 1, 1937. However, it is proposed that the necessary tariff filing be made at this time effective on that date.

Miscellaneous Items

Several modifications in rates and practices seem desirable in order to recognize changed conditions. The more important changes are as follows:

1. Extension of the following base rate areas to include certain development which is outside the present base rate area: [List omitted.]

This involves either the elimination of exchange line mileage or the provision of a better grade of service without increase in rate for all customers in the extended areas as well as a reduction in the exchange line mileage charges for those customers in the rural districts beyond the extension.

2. Changes in boundaries between the following central office districts: [List omitted.]

This recognizes necessary modifications in central office boundaries to take into consideration the present telephonic interests of the customers involved. It results in the substitut-

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tion of exchange line mileage for foreign exchange mileage or in the complete elimination of the foreign exchange mileage charge to those affected.

3. Change in exchange line mileage charges and locality rates in the following districts: [List omitted.]

This is in addition to the reductions occasioned by the modifications listed under Items (1) and (2) above. It results in additional decreases to those affected.

4. Extension of local service areas as follows: [List omitted.]

These extensions of the local service areas of very small exchange districts to include an adjacent district to which the small district is tributary are to be made without increase in rate.

5. Jack and plug equipment:

Outlet jacks are provided, now at an initial charge of \$4 each, for use in connection with portable telephones. This initial charge is for the jack only. The amount of station wiring to reach the jack is the same as with an extension telephone permanently connected to the line and the same service connection applies. However, in the mind of the subscriber a \$4 charge for the jack is thought to cover everything but the provision of the telephone instrument itself, and objections have been made to service connection charges for the instrument. In con-

sideration of this viewpoint, it is proposed that the installation charge for the jack be reduced to \$2 and the service connection charge be associated with each jack and not with the instrument. This will make for better understanding and the total charge in each case will be less than under the present arrangement. The total saving to subscribers will be in the neighborhood of \$5,000 per year.

6. Modification of miscellaneous rates and practices, as follows:

Duplicate listings involving non-adjacent central office districts—reduction from \$.50 to \$.25.

Alternate call number listings in districts where flat rates only are quoted for residence service—reduction from \$.50 to \$.25. One line night, Sunday, and holiday listings—no charge where customer is entitled to an additional free listing.

Season service—no charge for additional messages unless allowance for minimum period is exceeded.

Season service—elimination of September from season period.

Season service—remove season rates in Union Springs.

Season service—remove season rates in Orchard Beach section of City Island (Zone 5—New York city).

Installation charge—not to apply where additional single or double head receivers are installed.

Moves—charge for move of stations not to exceed "in place" service connection charge where equipment in place at new location is reused.

Moves—no charge for duplicate service for the first week except for local and toll messages used.

Extension bells, I. R. S. service—Allow free extension bells up to maximum of 4 or to the number of stations if less than 4.

Reduction in residence additional trunks and auxiliary line rates—reduction of \$.50 per month.

OREGON PUBLIC UTILITIES COMMISSIONER

Re Columbia City Water Company

[U-F-719, P. U. C. Or. Order No. 3265.]

Commissions, § 17 — Jurisdiction — Statutory limitations.

1. The Public Utilities Commissioner is a creature of statute and his jurisdiction is limited strictly to such powers and duties as are specifically granted by the statute; and no presumptions may be indulged in to enlarge such jurisdiction, p. 462.

Public utilities, § 34 — What constitute — Operation of leased plant under contract — Mutual company.

2. A water company owning neither the plant nor equipment by which it furnishes water to its stockholders, but leasing such property and contracting with an individual to operate the plant free from any control by the corporation whatsoever, is not a public utility, for it has effectually contracted itself out of any semblance of such status, p. 462.

Public utilities, § 58 — Mutual company — Leased plant.

3. A corporation which contracts to lease a water system and restrict the use of such system to its stockholders and refrain from serving any other persons is not engaged in serving the public but it is merely serving itself, p. 462.

Public utilities, § 27 — What constitutes — Test of status — Contract with single customer — Mutual company.

4. The owner of a water plant and equipment, leasing such property to a corporation and under contract with such corporation furnishing service to its stockholders, cannot be said to be serving the public, but as agent of the water corporation he is employed by the corporation and as the lessor of the property he is its landlord, p. 463.

Public utilities, § 34 — What constitutes — Lessor and operator of system — Furnishing of water not owned.

5. The owner of a water system who leases such system to a corporation, and under contract with the corporation agrees to furnish the water exclusively to stockholders of the corporation, is not a public utility with respect to so-called lessees to whom he furnishes water in violation of his contract with the corporation, since he himself has no property to devote to the use of the public, and one cannot devote to the public service property which does not belong to him, p. 463.

[May 6, 1936.]

INVESTIGATION of rates, charges, rules, regulations, methods, practices, and service of a water company; proceeding dismissed.

OREGON PUBLIC UTILITIES COMMISSIONER

McCOLLOCH, Commissioner: W. P. Maclay owns certain natural springs of water, together with the water rights in connection therewith, located in section 28, township 5 north, Range 1 west of W. M. in Columbia county, Oregon.

In December, 1925, a corporation known as the Columbia City Water Company (hereinafter called the Water Company) was organized by filing Articles of Incorporation with the Corporation Commissioner of Oregon "for the purpose of supplying water to its stockholders, for their mutual benefit," and for the purpose of owning, leasing, acquiring, using, renting, selling, disposing of, applying for, and making appropriations of water and water rights for the "mutual benefit of its stockholders." At the time of hearing the corporation had forty-three stockholders residing in Columbia City.

Prior to April 28, 1930, Mr. Maclay had improved his springs and laid out a gravity system of water mains from said springs to certain locations in Columbia City. On said April 28, 1930, Maclay leased to the Water Company, "for the sole and exclusive use of its stockholders only, all of his said water system including the springs, pipe line and necessary appurtenances thereto, and water rights now or during the term of this lease acquired by the said party of the first part (Maclay) on the premises above set forth.

"The lease contract provided that only the stockholders of the corporation should have the right to be furnished with water under the agreement; and that no other person, firm or corporation should be furnished or

supplied with water, with the sole exception that Maclay reserved the right to use, without cost to himself, such amount of water as might be necessary to supply his requirements for his own properties and premises within Columbia City. In the same instrument the corporation then designated Maclay to deliver and supply the water thus leased by it, through the system thus leased from Maclay, to the individual stockholders of the corporation, and agreed to pay to Maclay 90 per cent of all sums of money received from the water users or stockholders as rent for the springs and water system. Maclay, in the same instrument, was required to make the necessary physical connections for the Water Company to the individual users, and the instrument then recites that "he is hereby employed to collect all water rentals for which latter named service he shall be paid by the company 5 per cent of all sums of money received by the company from the water users or stockholders thereof for water rents and charges." The remaining 5 per cent of the water rentals was apparently designed to be used by the corporation to cover such expenses as might be necessary in maintaining its status with the Corporation Commissioner, and making annual reports, buying stationery and other small incidental items. The testimony discloses that Maclay has performed these functions for the corporation, and in consideration thereof has absorbed the remaining 5 per cent of the rentals thus collected.

This lease agreement provided by its own terms that it was to expire one year after date, but the testimony dis-

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closes that it has been continued in force by mutual consent from year to year without modification or alteration, and that the corporation and Maclay have strictly abided by the terms thereof up to and including the date of the hearing except as hereinafter particularly stated.

On August 29, 1934, Mr. Maclay entered into an agreement individually and in his own name with twenty-two residents of Columbia City who were not stockholders of the Water Company, and who are hereinafter called the "lessees." This agreement was in writing, and by its terms Maclay agreed to furnish to said twenty-two lessees, for a period of ninety days, water for household, domestic purposes from the springs and water rights described in the lease to the water company and undertook to make such delivery despite the fact that the system was already exclusively leased to the Water Company. The complainant herein, S. J. Eulrich, was one of the lessees named therein. On December 31, 1934, this agreement was renewed in writing for a term of one year. Under the agreement with the lessees Maclay agreed to charge the identical rates charged to the stockholders of the water company with one exception:—It appears that the residences of some of the lessees stood on higher ground, which required the installation of a pump in order to achieve sufficient pressure to serve such residences. The rates charged to the lessees included an extra small monthly charge to such users as resided at places requiring the use of the pump, and which would not ordinarily be capable of being served by the grav-

ity system. It seems that Mr. Maclay indiscriminately mixed the two operations in which he has engaged and that the stockholders of the Water Company, as well as the lessees, made remittances and wrote checks for their monthly payments to Columbia City Water Company or to W. P. Maclay. In any event, so far as any bookkeeping or accounting by Mr. Maclay was concerned, all money looked alike to him from whatsoever source it might have been received. Sums from the two sources were indiscriminately mixed with his personal accounts, and no separate bookkeeping or accounting for the two business ventures were kept.

Neither Columbia City Water Company nor Mr. Maclay have ever submitted themselves voluntarily to the jurisdiction of the Public Utilities Commissioner of Oregon.

S. J. Eulrich, the complainant herein, apparently believed that he was being served by the Water Company, and this proceeding arose on informal complaints from Mr. Eulrich, against the rates and practices of Columbia City Water Company. An investigation on the Commissioner's own motion was instigated whereupon Mr. Maclay immediately notified all lessees that he would refuse to furnish further service after December 31, 1935. An interlocutory order of the Commissioner was issued against him pending hearing, and Mr. Maclay has continued to serve the lessees until the present time.

Hearing was held before the Commissioner's examiner at the Columbia county court house at St. Helens on January 21, 1936. Appearances were

OREGON PUBLIC UTILITIES COMMISSIONER

as follows: For Columbia City Water Company, George G. Van Natta, Attorney at Law, St. Helens; for W. P. Maclay, W. W. Dillard, Attorney at Law; S. J. Eulrich, R. E. McLennon, for themselves individually; and A. L. Morris, for Columbia City Water Company.

Testimony was taken and the matter was thereafter fully submitted and is now before the Commissioner for review of a report and proposed order wherein Examiner T. O. Russell proposes and recommends that the Commissioner find that both Columbia City Water Company and W. P. Maclay are "public utilities" as defined in § 61-261, Oregon Code, 1930; that the rates now enjoyed by the stockholders of the water company are just and fair; that the rates prescribing an additional pumping charge for use by certain of the lessees are unjust, unfair, and unlawfully discriminatory; that such unjust, unlawful, and discriminatory rates be adjusted and new rate schedules filed by W. P. Maclay eliminating such unlawful discriminations.

Since both W. P. Maclay and the Water Company deny that they are public utilities, and have refused to submit voluntarily to the Commissioner's jurisdiction, it must first be determined whether or not they or either of them are such public utilities.

The examiner's report and recommendation calls attention to the following facts: That the lease agreement between Mr. Maclay and the Water Company, upon its face, was not an "arm's length" agreement; it is signed by W. P. Maclay, as party of the first part, and by W. P. Maclay

and his daughter, as secretary and president of the Columbia City Water Company, as parties of the second part. The examiner comments that this is in every particular an unusual document by which Maclay leases his property to the Water Company and then as agent of the Water Company proceeds to dispose of the water thus leased and pockets all of the gross receipts. The examiner further calls attention to the fact that if the lessees are deprived of service from Mr. Maclay that the results will be disastrous to them inasmuch as no other easily available means for securing domestic water supply is at hand. These considerations apparently weighed most heavily in bringing the examiner to the recommendations which he has made.

[1] The Public Utilities Commissioner is a creature of statute and his jurisdiction is limited strictly to such powers and duties as are specifically granted by the statute. No presumptions may be indulged in to enlarge the jurisdiction of the Commissioner, and unless the statute specifically grants jurisdiction in a particular case and under a particular state of facts, it is unlawful for the Commissioner to attempt to assert such jurisdiction.

[2, 3] In so far as the furnishing of water is concerned, § 61-201, Oregon Code, which defines a "public utility" reads as follows:—

"The term 'public utility,' as used herein, shall mean and embrace all corporations, companies, individuals, associations of individuals . . . that now . . . own, operate, manage, or control any plant or equipment . . . in this state . . . for the produc-

tion, transmission, delivery, or furnishing of . . . water . . . whether directly or indirectly to or for the public. . . ."

The Water Company does not "own" the plant or equipment by which it is furnishing the water to its stockholders, it does not "operate" the plant or equipment for, under the terms of the existing contract with Maclay, the corporation leases the plant and equipment from Maclay, but in the same instrument designates Maclay as the operator thereof free from any "control" by the corporation whatsoever. Clearly the Water Company is not a public utility, for it has effectually contracted itself out of any semblance of such status. Upon its face the contract in question was entered into by virtue of a resolution of the board of directors of the corporation. It has been in existence for over five years, and so far as the record in this proceeding is concerned, the stockholders have had no complaint to make about the agreement. On the other hand, all the effort of the representation of the water company at the hearing was directed toward sustaining the contract in question. The law gives ample opportunity and ample means for corporate stockholders and corporations to protect themselves from unwise contracts. The Public Utilities Commissioner represents the great unorganized mass of individuals who have no effective legal entity to represent and protect them in contracts of this nature. Where a corporation contracts to lease a water system and restricts the use of such system to its stockholders, and refrains from serving any other persons, it is

not engaged in serving the public—it is merely serving itself.

I therefore find that Columbia City Water Company is not a public utility.

[4] When W. P. Maclay leased his facilities to the Water Company did he thereby enter into the business of furnishing water "to or for the public?" By the very terms of the lease he devoted all of his facilities to the demands of one particular customer; namely, the Columbia City Water Company. When one devotes his property to the service of one customer under a particular contract, he cannot be said to be serving "the public." It is true that there are forty-three stockholders being served, but the lease contract from which we must test the status of Mr. Maclay is between himself, on the one hand, and the single legal entity—the corporation, on the other hand. It is true that the corporation, in the same instrument, appoints Maclay as its agent to distribute the water to its stockholders, and fixes the compensation, but the Maclay who distributes the water to the stockholders is not the same Maclay who leased the water system to the corporation—in one case he is "employed" by the corporation, and in the other he is its landlord.

I therefore find that in so far as the transaction between Maclay and the Water Company is concerned that Maclay was not a "public utility."

[5] Mr. Maclay decided in 1934 to take on some more customers in his individual capacity, and proceeded to deal with Mr. Eulrich and others by contract. By so doing he contracted to sell something already belonging exclusively to the Water Company.

OREGON PUBLIC UTILITIES COMMISSIONER

He had already entered into a solemn covenant to devote his water supply to the Water Company. Everyone at the hearing agreed, including his own counsel, that he thereby violated his contract with the Water Company. These users, the lessees, now ask the Commissioner to find that Mr. Maclay, by furnishing them with water belonging to someone else, devoted *his* property to the use of the public. The answer is obvious—it was not his property to sell, he had already sold it to the Columbia City Water Company. If it were to be found and determined that Maclay was a public utility, and an order were entered herein requiring Mr. Maclay to continue to serve the lessees with water as a public utility, such order would stand upon extremely frail foundation. One cannot devote to the public service property which does not belong to him. For this Commission to order him to continue to do so would be compounding the wrong already done by Maclay to the Water Company. The income derived from the lessees apparently be-

longs to the Water Company—not to Maclay. If the Water Company desires to devote a portion of its surplus to the use of the lessees, certainly arrangements to that end can be made and the staff of this Commission, upon request of the interested parties, will gladly coöperate to that end.

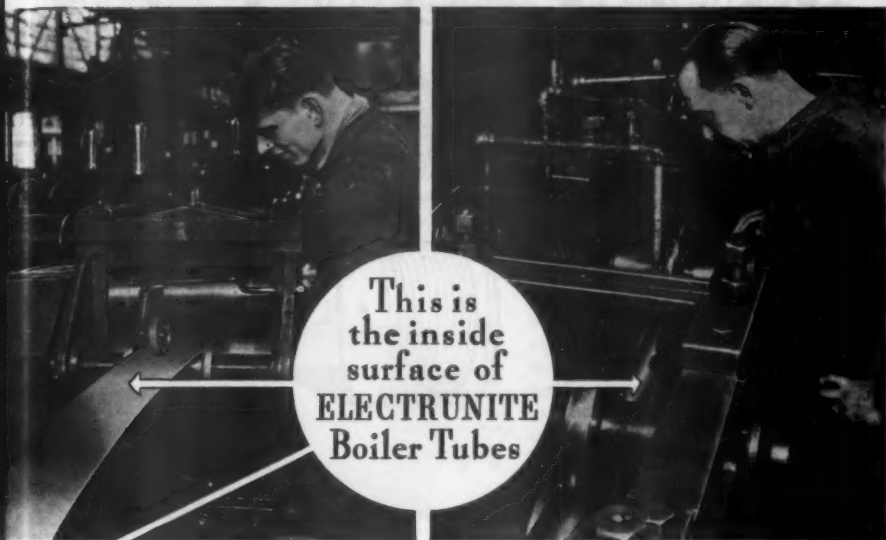
We must likewise not forget that in so far as W. P. Maclay is concerned the question of the jurisdiction of the Commission over him in this proceeding is extremely doubtful. This proceeding was started as an investigation of the rates, practices, and charges of Columbia City Water Company, and Columbia City Water Company is the respondent herein—not W. P. Maclay.

I therefore find and determine that W. P. Maclay, in so far as his dealings and transactions with the lessees are concerned, is not a "public utility."

This proceeding will be dismissed and closed on the docket of the Commissioner.

And it is so *ordered*.

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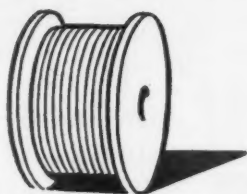
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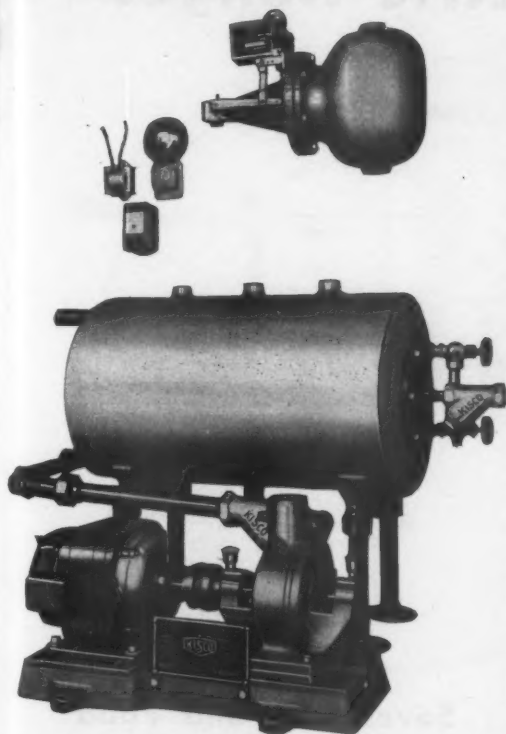


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Protection and Savings For Any Size Plant With the **KISCO RETURN-TO-BOILER SYSTEM** *Automatically Handles Condensation and Make-Up Water*



THE KISCO "JR" **Return-to-Boiler System**

This model was designed especially for the smaller boiler users, the majority of whom are operating under a handicap.

The Kisco "Jr" Model will handle both High and Low Pressure Condensation from equipment on the same floor level and also Automatically take care of the new make-up water regularly. This naturally assures the operator of the highest efficiency from the boiler and likewise protection against low water conditions.

The entire system is controlled by the water in the boiler, through the Kisco "Balanced Lever" Combination Switch Control, which also provides added protection through the Low Water Alarm Signal.

**We Also Build Models
For Boilers Up To 1000
H.P.—150 lb. Pressure**

The Kisco Return-to-Boiler System is the only individual system which will perform the most important duties in a boiler room; namely, reclaim the condensation from equipment throughout the plant, automatically add the necessary make-up water in small quantities, when required, and provide a constant and uniform water level and steam space. It is the Pioneer and Recognized Leader in the field and attained its position only through its High Quality Construction and Guaranteed Performance.

INVESTIGATE BEFORE YOU INVEST in any other assembly.

Write for our Catalog Folder P.U. 9-2.

KISCO BOILER & ENGINEERING CO.

4333-35 DUNCAN AVE.

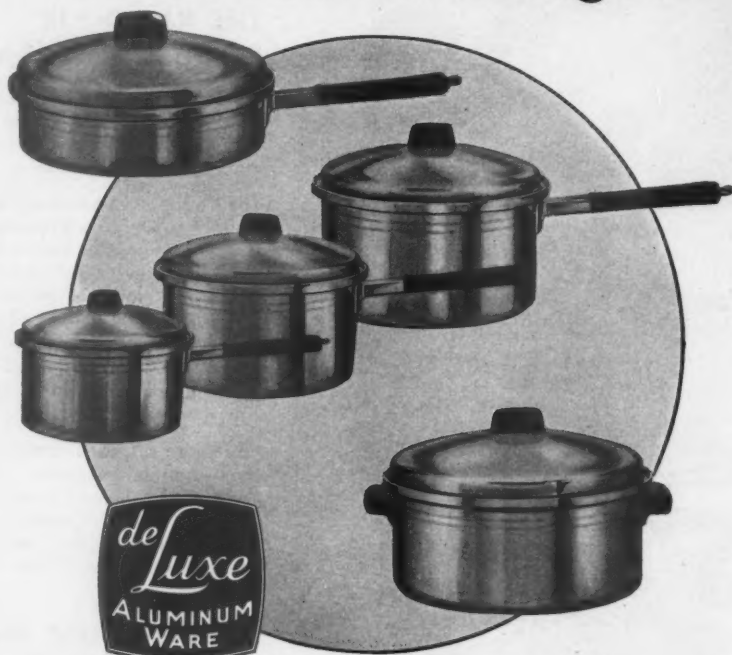


ST. LOUIS, MO.

DESIGNERS AND MANUFACTURERS OF BOILER ROOM EQUIPMENT

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Designed for Electric Ranges



Triple Thick... Saves Fuel and Food

A beautifully matched set—serves all cooking needs. Prepares food the healthful, waterless way—without waste of fuel or food. Wide, flat bottoms and straight sides result in high thermal efficiency.

Years Ahead in Features

1. Flavo-Seal covers—retain flavor and food value.
2. Heat-resisting bakelite cover knobs.
3. Triple thick aluminum—heats quickly and thoroughly.
4. Dutch oven has trivet.
5. Flat bottoms— snugly fit heating unit.
6. Rounded corners are easy to clean.
7. Rectangular bakelite handles will not turn or loosen—remain cool.

For Electric Range Promotion

This set is the ideal accessory to the electric range. Convenience and economy features create satisfied consumers. Set consists of a 5 quart Dutch Oven, 2, 3 and 4 quart Sauce Pans, and a 10 inch Covered Skillet.

Write for Details!

Bulletins and prices with suggested plans for promoting electric range sales will be sent on request!

WEST BEND ALUMINUM COMPANY

Dept. 66

West Bend, Wisconsin



No. 13

Sept. 24, 1936

Pennsylvania's Page

Before You Buy Power Transformers

Ask these Questions . . .

Does the transformer have the features which provide the MAXIMUM in service—economy—safety?

Are the radiators fabricated of 13-gauge steel?

Are the radiators tested at the factory at 100 pounds pressure?

Are the radiators built as an integral part of the tank, permanently welded in position, thus eliminating valves, flanges, gaskets and bolted connections?

Does each radiator consist of a single row of tubes which can be sand-blasted, cleaned, and painted (by brush or spray) in factory or field?

- Are the tubes of the radiators uniformly shaped throughout their length, thus promoting more efficient oil-circulation?
- Do the tap-changers have sliding, self-cleaning pressure contacts?
- Are the tap-changers operated by rack and gear, which eliminate back-lash and assure positive contact at all times?
- Are the coils circular and so balanced that there is no tendency for radial or axial distortion under short circuit?
- Do the coils have a low temperature gradient between copper and oil,—a feature which determines the quality of performance?

Pennsylvania Answers "Yes"

Pennsylvania Transformers, incorporating these fundamental improvements, provide the maximum in service, economy and safety!

Pennsylvania Transformer Company
 601 Island Avenue
 PITTSBURGH, PA.



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GARRISON

The Modern DRY Method of FIRE Extinguishment

BULLETIN NO. 4—for the information of PUBLIC UTILITY EXECUTIVES

GARRISON WHEELED ENGINE NO. 100

*Weight 350 lbs. Width 29 in. Height 51 in.
Capacity of Compound Tank, 100 lbs. Pres-
sure cylinder capacity 100 cu. ft. Equipped
with easy-reading gauges, automatic shut-off
control nozzle, and 50 ft. of $\frac{1}{2}$ inch hose.*

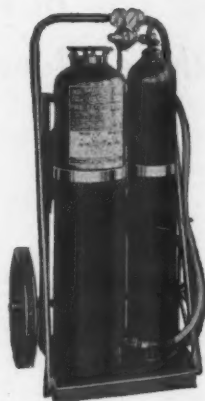
A bad fire—250 gallons of oil and 20 gallons of gasoline, in a pit 20 x 10 ft., 12 in. deep, burning 3 minutes—was extinguished by GARRISON wheeled engine No. 100 in 27 SECONDS! Try to match that with any size of any ordinary fire-extinguisher!

No. 100, because of its size and low wheels, is best suited for indoor use, or comparatively smooth outdoor surfaces. It will pass through standard door openings. The capacity of the pressure cylinder is more than sufficient to completely empty the compound tank. Pressure remaining after use is registered on a pressure gauge. An automatic reducing valve regulates the pressure admitted to the compound tank when in operation, so that a uniform STEADY EFFECTIVE STREAM is always secured. The operator is protected by the cool barrier of GARRISON DRY compound, in the form of a cloud, and by the expanding fire-extinguishing gas under pressure, which blows away the flames and permits close approach to the fire. The more intense the fire, the greater is the extinguishing action of GARRISON DRY compound.

GARRISON wheeled engine No. 100 W is the same as No. 100, but is equipped with 36 inch wheels with 2½ inch face.

REMEMBER—GARRISON DRY compound is a non-conductor of electricity—never deteriorates—and harms nothing but fire.

Sole Exclusive Manufacturing and Sales Licensee under all Du Gas Company patents—U. S. Patents 1,793,420, 1,839,658, 1,866,981, and others issued, and patents applied for—and foreign patents both issued and pending—as well as under Garrison "patent applications pending."



GARRISON ENGINEERING CORPORATION

Factories and Executive Offices

GREAT BARRINGTON, MASSACHUSETTS

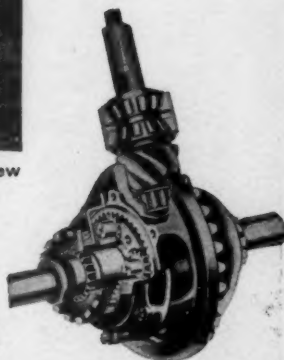
OFFICES AND DISTRIBUTORS IN PRINCIPAL CITIES

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International with 2-speed rear axle. These trucks bring new performance and economy to jobs like yours.

POWER when you need it —SPEED when you want it in the INTERNATIONAL 2-Speed Axle



THE 2-speed rear axle trucks available in the International line now make it possible for truck users to obtain both high-speed and low-speed performance in one unit. A simple movement of the shifting lever changes the axle ratios instantly and silently without stopping the truck. The low-gear ratio provides power for hauling heavy loads through tough going and up steep hills, while the high-gear ratio allows high speeds on level roads or with light loads.

The extreme flexibility of these dual-range, full-floating rear axles enables the International 2-speed axle trucks to do more work at lower cost.

When you see these 2-speed rear-axle Internationals in action in a tough spot, you will get a good idea of what they can do for you. Ask the nearest Company-owned branch, or International dealer, for a demonstration. There is a full range of other trucks in the International line, from the Half-Ton unit to the powerful Six-Wheelers.

INTERNATIONAL HARVESTER COMPANY
(Incorporated)

606 So. Michigan Ave.

Chicago, Illinois

INTERNATIONAL TRUCKS

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"Gosh, I wish they'd buy more of these Emco-Nordstroms"



The perfect replacement valves for all services.



FOR REPLACEMENT SERVICE

Emco-Nordstroms are a Nordstrom product, embodying the patented "Sealdport" lubrication. Face-to-face dimensions are identical to gate valves, making unnecessary any change in pipe or fittings when replacing old valves.

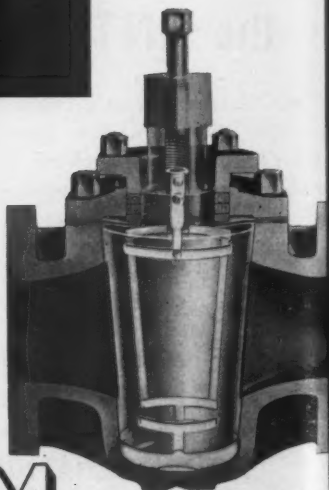
Emco-Nordstrom Valves and Nordstrom Standard Valves are available in many types of alloys. Corrosion and erosion-resistant. Always easy to turn. Non-sticking. Ask for bulletins.

MERCO NORDSTROM VALVE COMPANY

a subsidiary of

PITTSBURGH EQUITABLE METER COMPANY

Main Offices: Pittsburgh, Penna. Branch Offices: New York City, Buffalo, Philadelphia, Columbia, Memphis, Atlanta, Chicago, Kansas City, Tulsa, Houston, Los Angeles and Oakland.



Cross-sectional view of standard type Nordstrom Valve

NORDSTROM

Lubricated **VALVES**

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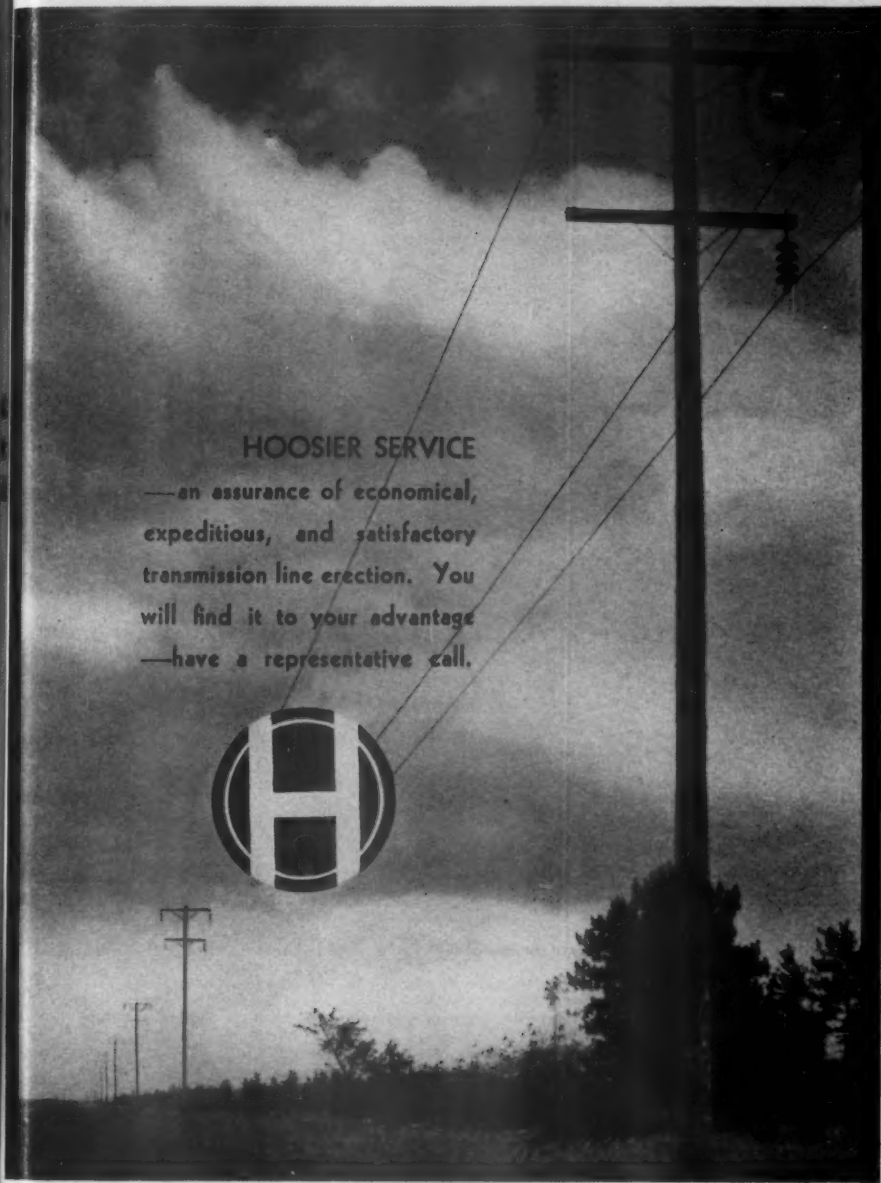
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—an assurance of economical,
expeditious, and satisfactory
transmission line erection. You
will find it to your advantage
—have a representative call.



HOOSIER ENGINEERING COMPANY

ERECTORS OF TRANSMISSION LINES

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NEW YORK

Canadian Hoosier Engineering Company, Ltd., Montreal

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**PUT YOUR FINGER
ON *this* DIAL**



Point out to your customers the sure way to MODERN GAS COOKERY

American Gas Association national advertising now tells your customers about MODERN GAS COOKERY... this dial helps you sell it!

Have salesmen point to the dial—have them point out that Robertshaw oven-heat control is the big feature that makes cookery modern.

Accurate control of temperature—perfect control over meat shrinkage—freedom to leave the kitchen—these are the time-saving, work-saving features that women will understand as modern. These are the features that Robertshaw provides.

Sell Robertshaw-equipped ranges. Be sure the dial is marked Robertshaw. Over 16 years of advertising have made that name stand for modern cookery. This year it's the name that helps you sell modern cookery.

ROBERTSHAW THERMOSTAT COMPANY, YOUNGWOOD, PENNA.

OVER 2,600,000 IN USE

ROBERTSHAW

OVEN-HEAT-CONTROL

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During the last few years
there has been a decided

SWING^{to} RILEY STEAM GENERATING UNITS

A Few of the Companies who have recently installed
Riley Boilers

Lynn Gas & Electric Co. . . 205,000 lbs./hr.—430 lbs.—810° F.

Stone & Webster Engineering Corp., Engineers

W. Va. Pulp & Paper Co., Covington . . 375,000 lbs./hr.—600 lbs.—750° F.

Titanium Pigment Co. . . 125,000 lbs./hr.—448 lbs.—637° F.

Ford, Bacon & Davis, Engineers

Large Eastern Oil Refinery . . . 300,000 lbs./hr.—646 lbs.—740° F.

Standard Oil of California . . . 125,000 lbs./hr.—850 lbs.—760° F.

Stone & Webster Engineering Corp., Engineers

Pennsylvania Sugar Refining Co. . . 350,000 lbs./hr.—400 lbs.—505° F.

Carbide & Carbon Chemicals Corp. . . 80,000 lbs./hr.—600 lbs.—650° F.

W. Va. Pulp & Paper Co., Luke . . . 375,000 lbs./hr.—631 lbs.—700° F.

Savannah Sugar Refining Co. . . . 100,000 lbs./hr.—325 lbs.—620° F.

Kalamazoo Vegetable Parchment . . . 150,000 lbs./hr.—275 lbs.—650° F.

Prof. C. F. Hirschfeld, Consulting Engineer

Forstmann Woolen Co. . . . 80,000 lbs./hr.—450 lbs.—612° F.

General Aniline Co. . . . 65,000 lbs./hr.—450 lbs.—670° F.

The swing of plant after plant to Riley Steam Generating Units during the past few years
is undeniably established Riley as one of the leaders of the boiler industry.

Be sure to consult Riley when steam generating or fuel burning equipment is being considered.

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ST. PAUL

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PITTSBURGH
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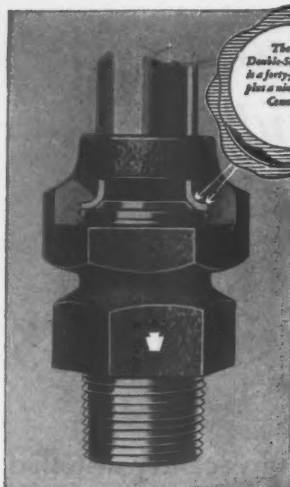
CLEVELAND
CHICAGO

DETROIT
LOS ANGELES

COMPLETE STEAM GENERATING UNITS

BOILERS - SUPERHEATERS - AIR HEATERS - ECONOMIZERS - WATER-COOLED FURNACES
EVAPORATORS - BURNERS - MECHANICAL STOKERS - STEEL-CLAD INSULATED SETTINGS

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THE KEYSTONE MARK



to show approval
by Under-
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tories

Use the Hays Copper Method to Hook up Modern Appliances Efficiently

MODERN appliances deserve a good appearing installation job. It pays in dollars and cents also to use the Modern Hays Copper Method. We invite your investigation of its good appearance, great strength, long life and economy.

Use Hays Double Seals to hook up appliances; for water or gas service lines and for miscellaneous repair or replacement work. In fact, wherever copper tubing is used, you will find Double Seals in demand. Start your investigation today.

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HAYS MFG. CO.



A COPY
ERIE, PENNA.

Specify **HAYS DOUBLE SEALS**

CONCENTRATE ON IT! . . . THE MORE-THAN-MODERN

ESTATE ELECTRIC RANGE



NO OTHER ELECTRIC RANGE CAN GIVE YOUR CUSTOMERS SO MANY PRACTICAL COOKING FEATURES — NO OTHER RANGE CAN GIVE YOU SO MANY SALES-CLINCHING ADVANTAGES. THE SUPER-SMART 1936 ESTATE!

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Throw Your Voice to the AUDITOR

Here is a trick . . . and it is not ventriloquism . . . that busy executives are doing dozens of times every day and it saves time, money and nerves.

You merely flick a key and talk. Instantly your voice, *broadcast* through the super-sensitive microphone or *whispered* in privacy through the special hand set, is heard in the Auditor's Dept., Engineering Dept., Operating Dept.—in any part of the organization selected by your forefinger.

Telematic is the name of this ingenious instant system of *intracommunication*. It has no connection with your regular telephone switchboard. Hence it does not stop outside calls or clog inside lines. Telematic provides instant contact between departments for any information required during telephone conversations.

Numbering among the thousands of TELEMATIC users are New York Edison Co., Kansas City Power & Light, Public Service of N. J., Columbus Street Railway Power & Light, and many others. The coupon below makes it easy for you to secure the names of users in your locality so that you can check their experience and satisfaction with Telematic.

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● Exclusive Time-a-ture combines automatic time and temperature control. Two appliance outlets . . warming drawer unit. Lustrous porcelain enamel finish . . sparkling chrome trim. Wire or write for complete facts.

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SEND FOR THIS FREE BOOKLET



TWO paints may look alike in the can and sometimes even on the surface to which they are applied, yet they may be constituted of widely differing ingredients and intended for as widely different uses.

Lead is of great value in some paints yet in others it is a detriment. Similarly linseed oil is indispensable in some paints while in others china wood oil is far superior.

Paints must be selected according to the service they are expected to render, the conditions of their use and abuse and the surfaces to which they are to be applied.

More than thirty years of experience has taught us the right combination of pigments and liquids for custom built paints, each one designed for its particular field.

In the booklet offered above we describe maintenance paint products specially designed for and used by more than five hundred public utilities. Send for a copy. It may be the means of solving many troublesome painting problems.

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OF
71
CUSTOM MADE
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ROOFKOTER

A heavy black semi-liquid cement, asbestos reinforced. Designed to renew old roofs of all kinds. Spreads right over old roof forming seamless rubber-like surface. Send for illustrated booklet.

The Tropical Paint & Oil Company
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Cleveland, Ohio



L. T. P.—103
Temperature
and
Pressure
Relief Valve

FOR SAFE OPERATION OF DOMESTIC WATER HEATERS

Every now and then, some domestic water heater "lets go"—to the ruin of itself and the damage of surrounding property. And someone wonders what happened to the pressure relief system . . . little realizing that pressure relief alone is *not* sufficient; *that the temperature of the water must be held within safe limits.*

KITSON has long recognized this principle of temperature limitation . . . proved it by exhaustive investigation in laboratory and field. Accordingly, all KITSON Safety Devices (made under Lovekin patents) are designed to limit the temperature. KITSON devices give positive Emergency Relief!

Write for literature based on our study of this subject. There is no obligation.

KITSON COMPANY

2409-15 Westmoreland St. Philadelphia, Pa.

Kitson Safety Devices
(Lovekin Patents) for
Domestic Water Heaters

Quality Brass Goods
for Gas, Water
and All Plumbing Uses

ESTABLISHED 1897

DAVEY LINE CLEARING SERVICE

Good Weather for Line Clearing

HERE WE ARE getting into the season of snappy nights and brisk, crisp days. And it's good weather for something more than football.

Watch the Davey line clearing crews breeze through the trees. Fall weather looks good to them, too. Autumn days are full of pep. It's a joy to be alive and to pour out the work. During the cool fall months is a fine time to get things done. It's a good time for getting rid of your tree interference problems. It's a good time to get a maximum amount of work for each dollar you spend. It's as good a time as any to try Davey line clearing service.

Any service is just about as good or as bad as the men who supply it. Davey men will look good to you—they're hand-picked, sturdy, alert, intelligent. And that has a good deal to do with the way they handle their work.

THE DAVEY TREE EXPERT CO.,

Kent, Ohio

DAVEY TREE SURGEONS

PIPE STOPPERS



All Types PIPE LINE SUPPLIES

Goodman Stoppers
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Bags—Rubber, Canvas Covered
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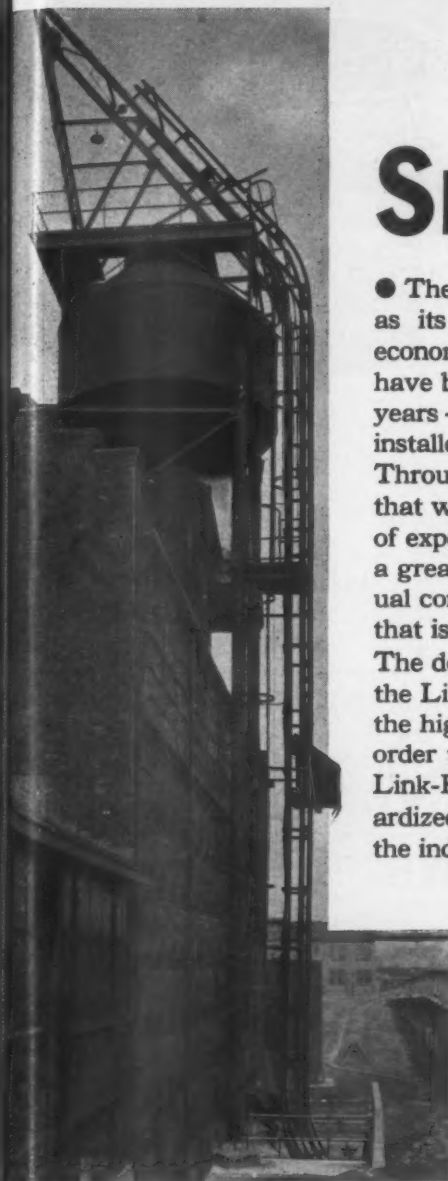
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The SKIP HOIST

● The Skip Hoist needs no introduction, as its simplicity of construction and economy of installation and upkeep have been known to industry for many years — our first machine having been installed 30 years ago.

Throughout these years it is but natural that we should have acquired a wealth of experience in applying skip hoists to a great variety of purposes and individual conditions, and it is this experience that is always at your disposal.

The design of the various elements of the Link-Belt Skip, has been carried to the highest point of standardization in order to assure reliable operation, and Link-Belt engineers adapt these standardized units in the best way to meet the individual needs of each installation.

Link-Belt equipment for the power plant includes, in addition to Skip Hoists, the Peck Overlapping Pivoted Bucket Carrier—Belt Conveyors—Flight Conveyors—Gravity Discharge Conveyors—Portable Belt Conveyors—Rotary Railroad Car Dumpers—Locomotive and Crawler Cranes—Bucket Elevators—Bucket Loaders—The Power Hoe (Drag Scraper)—Weigh Larries—Crushers—Feeders—Water Intake Screens—Suspension Bunkers and Accessories. Address Link-Belt Company, Chicago, Philadelphia, Indianapolis, Atlanta, San Francisco, Toronto, or any of our offices, located in principal cities.

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LINK-BELT

COAL AND ASHES HANDLING EQUIPMENT

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CONDENSING EQUIPMENTS

Thousands of C. H. Wheeler installations testify to the value of condenser specialization.

Turbine Efficiency depends directly on Condenser Efficiency.

In all cases we build the machines to fit the particular conditions of the plants in which they go.

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Philadelphia, Pa.

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Now Ready USALITE "INDUSTRIAL CELLS"

To give you far more dependable service than you ever had before—the No. 1095 USALITE Industrial Cell.

Bureau of Standards specifications call for 400 minutes to a 0.9 volt cut-off. No. 1095 will give over 80% of its service above the 1 volt cut-off,—more than double the specifications of U. S. B. O. S.

"25 years of knowing how" is back of the dependability of USALITE Products, laboratory tested and inspected. Expert supervision assure longer life and uniform quality. 1095 USALITE has captured the demand of Railroads, Chemical, Powder, Oil and Gas Companies, Utilities and Coal mines everywhere.

We'll be glad to send you FREE samples of 1095 cell for inspection and trial tests. Write today!

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SOOT BLOWERS

*Durable
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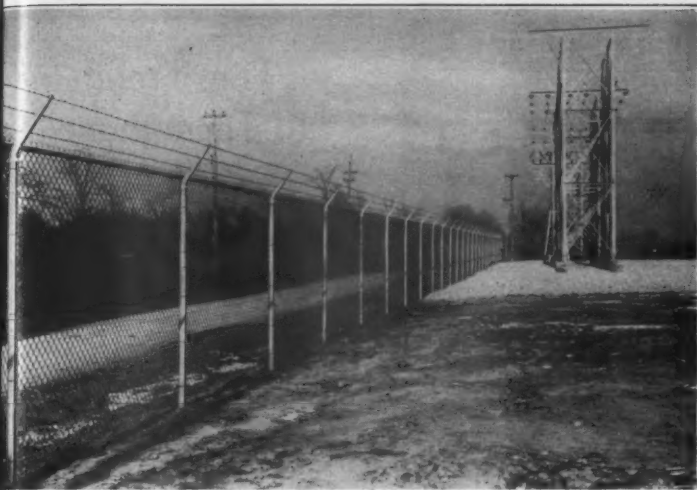
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No weak spots for corrosion to attack—The Bethanized Wire can be wrapped around its own diameter without breaking or flaking its corrosion-defying zinc coating.

These fences Stand Up
Years longer because they can

STAND THE WRAP!



Here are the quick facts. Unlike other chain link wire, the zinc coating on Bethanized Wire is chemically pure—free from any vulnerable iron content. It is smooth and uniform—free from rough or thin spots. And it is extremely ductile—not hard, brittle and flaky. Twist the wire, bend it double, wrap it around itself—you just can't break the zinc coating and expose the steel core to corrosion.

Think what that means. An Anchor Fence of Bethanized Wire is a fence with no flaws in its pure zinc armor—no cracks or crevices through which

corrosion can creep in. Because Bethanized Wire can "stand the wrap," these Anchor Fences stand up for many years beyond the lifetime of any other chain link fence—even in industrial atmospheres that are heavy with soot, salt, sulphur and other corroding agents. And now there's no premium—no extra cost—for Bethanized Wire.

Send for the free book of facts about these better looking, longer lasting Anchor Fences—and about Anchor's nationwide sales and erecting service. Write today—to the address below.

ANCHOR Fences

OF **BETHANIZED WIRE**


ANCHOR POST FENCE COMPANY, 6630 EASTERN AVENUE, BALTIMORE, MARYLAND

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BOILER SAFETY BOILER SAFETY BOILER SAFETY

GUARANTEED UNSINKABLE

- *Instantaneous Action*



- *Absolute Dependability*

**Reliance Boiler Alarms Have These
Two Essentials of Safety in
THE RELIANCE MONEL FLOAT**

We guarantee Reliance Monel Floats against failure under the pressures for which sold—a plain guarantee that means just what it says.

We make this guarantee because our experience and the experience of thousands and thousands of users have proved that these floats do not fail.

Reliance floats are highly buoyant, instantly sensitive in their response to even slight movements of the water. With simple positive Reliance Alarm mechanism, they guarantee you hair-trigger action—nearly four times as quick as any other type of alarm.

For positive boiler safety, specify Reliance

The Reliance Gauge Column Co.
5930 Carnegie Avenue
Cleveland, Ohio

Reliance

SAFETY WATER COLUMNS

See our Exhibit at the Twelfth National
Exposition of Power & Mechanical Engineering,
Grand Central Palace, New York,
November 30 to December 5, 1936.

The Trend to Dictaphone Sweeps On

To your secretary, it means all that note-taking time is released for valuable work. To you, it means instant dictation facilities always available, without dependence on anybody else. That's why we say this modern dictating instrument doubles your ability to get things done.

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Star Brass Manufacturing Co.

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Makers of Highest Quality
"Non-Corrosive" Pressure and Vacuum Gages—Safety and Relief Valves—Globe, Angle and Gate Valves—Water Gages—Gage Cocks Whistles



New York
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San Francisco
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Shreveport, La.



Never before has The Babcock & Wilcox Company had such a wide range of equipment suitable for modernizing older power stations that are now obsolescent because of the great strides made during the past ten years in the economical generation of power.

Since 1929, the Company has developed, or announced as available: new types of boilers, a new water-cooled furnace construction, a pulverizer of 50-tons capacity, new types of fuel-burning equipment, and many improvements made in its other products.

The Babcock & Wilcox Company is fully prepared to help producers of power to carry out modernization programs involving changes, such as the installation of modern slag-tap furnaces with water-cooled floors, high-pressure boilers super-imposed on existing low-pressure systems, or high-pressure high-temperature units.

Babcock & Wilcox Engineers will be glad to discuss with executives and engineers the economic application of these new and improved products.

The Babcock & Wilcox Company . . . 85 Liberty Street . . . N. Y.

BABCOCK & WILCOX

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FOR DEVELOPMENTS IN OIL RESISTANCE

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*A*LERT Engineering and Purchasing Departments are invited to send for this essential Library of Maintenance Data...including (1) Up-To-The-Minute Releases from the ARCO Research Laboratories; (2) Cumulative development, in ready reference form, of 57 years' experience in formulating maintenance paints for Public Utilities. Address: Department F, THE ARCO COMPANY...CLEVELAND or LOS ANGELES.



SPECIFY

ARCO

**LIBRARY OF
MAINTENANCE
PAINTS**

No. 10 of a series of messages to Public Utility executives pointing out opportunities for load-building by promoting the use of electric arc welding.

It pays to promote arc welding!

1 lb. = 1.75 K.W.H.

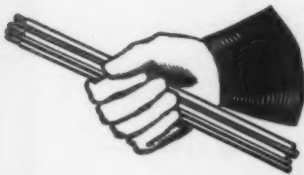
*Free
Instruction
for Power
Salesmen*

In several cities, the local Lincoln engineers are contributing their services to the instruction of power salesmen, periodically, in the various phases of arc welding application. These blackboard talks give the salesmen sufficient knowledge of arc welding so that they can discuss it intelligently with prospects. Are you interested in securing this service? Just get in touch with our main office in Cleveland, Ohio.

When you think of arc welding, think of it in terms of this revenue arithmetic! For every pound of arc welding electrode used, the power meter clicks off 1.75 kilowatt-hours.

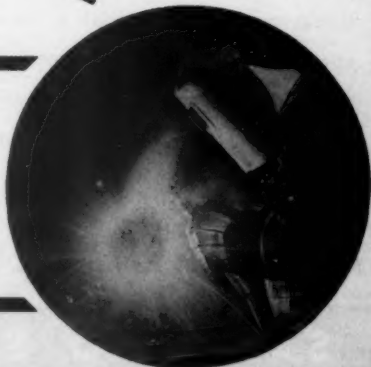
The time is right for you to help create these revenue-producing arcs. New developments in equipment and technique now bring the arc welding process within easy reach of plants who formerly could not afford it and make possible applications heretofore impractical. You can NOW get results with less effort. Investigate, then promote this profitable power field!

Our men will gladly assist you at any time. Communicate with THE LINCOLN ELECTRIC COMPANY, Dept. YY-293, Cleveland, Ohio. Largest Manufacturers of Arc Welding Equipment in the World.



The average welder uses 5,000 to 10,000 lbs. of electrodes per year. This requires 1.75 K.W.H. per pound.

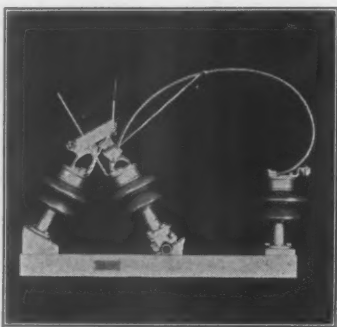
LINCOLN



RURAL LINE SWITCHES

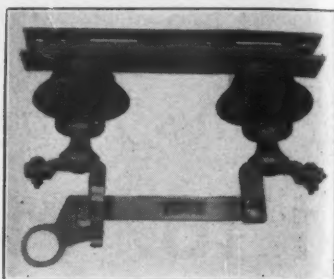
(Single Pole—Three Pole)

SWITCHING equipment must be designed to meet certain practical limitations. Service requirements must be weighed against cost. Under certain conditions more consideration must be given to one than to other factors.



"RF-35" DISCONNECT

See Bulletin 35-B
(7.5 to 34.5 K.V.)



"RFB-2" DISCONNECT

Switches especially designed to meet the demand of that class of service which does not require ratings exceeding 400 amperes, where economy must be given first consideration—but not to the extent of impairing service.

Delta-Star



Electric Co.

2400 BLOCK, FULTON STREET, CHICAGO, ILL.

SANGAMO TYPE L-2 METERS

The Type L-2 two-element meters comprise two complete electro-magnetic elements driving a single disk. They are designed for modern "A" and "S" mountings, thus combining convenience in installation with a minimum of space requirements. Electrical characteristics meet all the requirements for modern meter accuracy and performance.

SINGLE DISK TWO-ELEMENT METERS



TYPE L-2-S



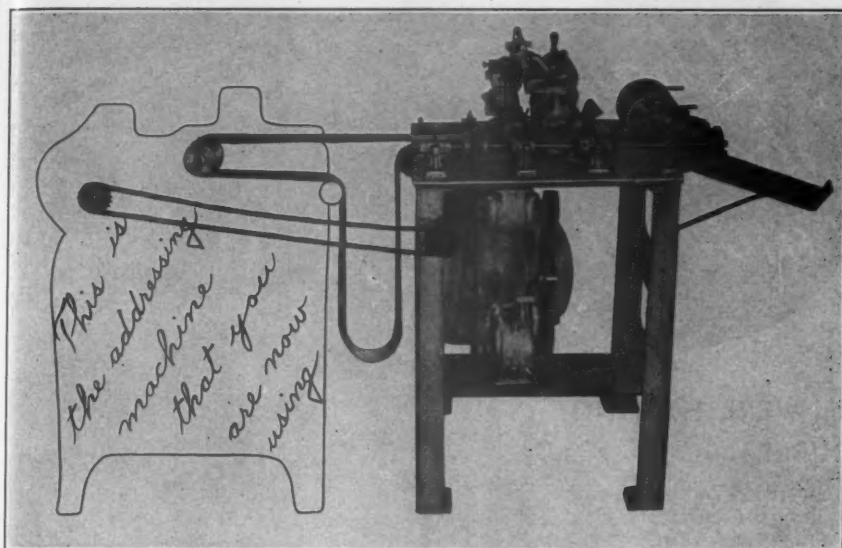
TYPE L-2-A

Modern Meters for Modern Loads

SANGAMO ELECTRIC COMPANY

SPRINGFIELD, ILLINOIS

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Here's a Bill Printing Machine that can be used with ANY Addressing Machine

Instead of continually paying money for pre-printed bills, convert your *present* addressing system into a *combination* printing and addressing system. You can readily do it with the

Elliott Bill Printing Machine

This machine will pull blank paper, from rolls, under the addressing head of your present addressing machine to receive the addresses. It will then continue feeding this paper through the printer (shown above at the right), where it is printed on the front and back, scored, dated and chopped off.

With the Elliott Bill Printing Machine you not only save on printing bills, but you speed up your addressing operation, as it is really an automatic feed through the addressing machine instead of a hand feed.

Here is something new, designed to bring the advantages of bill printing to those who do not desire to make extensive changes in their addressing system. The Elliott Bill Printing Machine can be used in conjunction with any model of any addressing machine now used for Utilities' billing and with any kind of an addressing medium.

Write NOW for details of this time and money saving combination. State what addressing machine you are now using, size of list, etc.

THE ELLIOTT ADDRESSING MACHINE COMPANY

Manufacturers of Hand and Electric Addressing Machines for Every Need and Purpose

INCORPORATED 1900 ~ RATED AAA1

175 ALBANY STREET, CAMBRIDGE, MASS.

SALES AND SERVICE OFFICES IN ALL PRINCIPAL CITIES

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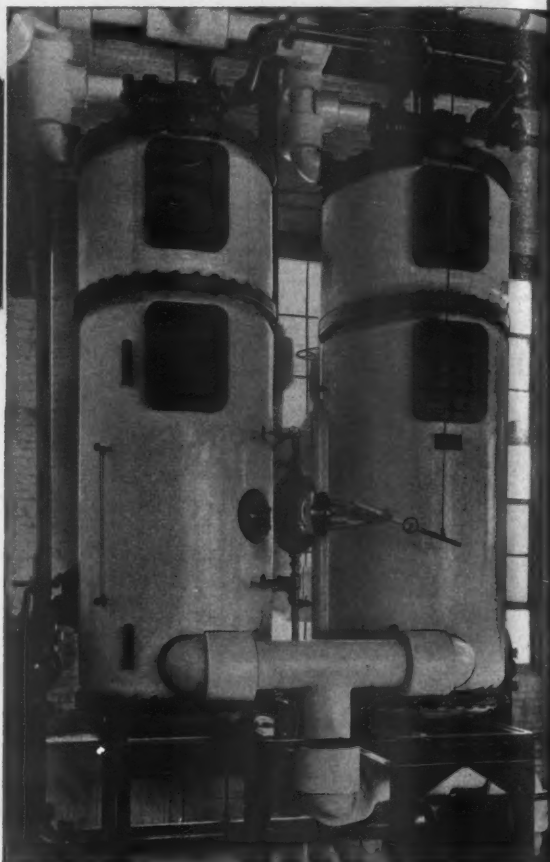
What the doctor ordered

THEY WERE HAVING TROUBLE

with corrosion in boilers and pipe lines, necessitating a continuous program of repair and replacement. They called in the Elliott man, and the proper size and type of Elliott deaerating feed water heater was installed. Result: corrosion completely eliminated. The remedy was exactly "What the doctor ordered."

That, in brief, has happened in many plants over the past 16 or 17 years since Elliott pioneered the deaeration of boiler feed water. It is still happening today, perhaps not as frequently, because engineers have learned the importance of preventing corrosion by deaerating the feed water before trouble starts.

The cost of deaeration is really negligible. The installation of Elliott deaerating equipment can be justified almost alone on the basis of its 100 per cent heating performance. For it heats right up to the saturated temperature of the maximum steam pressure supplied to the heater. Deaeration is therefore very cheap insurance against corrosion worries.



ELLIOTT DEAERATORS and DEAERATING HEATERS

are built in all sizes, all types with openings and accessories built to the job.

Come to "Deaeration Headquarters" for the benefit of Elliott's long experience in designing and applying deaerating heaters and deaerators.

ELLIOTT COMPANY

PITTSBURGH, PA.

Deaerator and Heater Department: JEANNETTE, PA.
District Offices in Principal Cities



COSTS ON JOBS LIKE THIS *are Negligible*

Utility men find they no longer look at a street opening, concrete breaking, or other demolition job and figure how much it costs, after they adopt Barcos. Instead, except with all day or longer jobs, they figure how *little* it will cost—or dismiss the cost as insignificant.

Both the investment in a Barco Gasoline Hammer and its operating cost are extremely moderate in comparison with equipment formerly necessary. In many cases fuel costs on street jobs will be less than a quart of medium grade gasoline plus a small amount of oil.

Send for full data on this portable powerful tool.

BARCO

Portable Powerful

GASOLINE HAMMER



BARCO MANUFACTURING COMPANY

1803 W. Winnemac Avenue, Chicago, Ill.

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Make a good Job better *with* **CRESCENT WIRE**

CONTROL CABLE
DROP CABLE
LEAD COVERED CABLE
MAGNET WIRE
PARKWAY CABLE
RUBBER POWER CABLE
SERVICE ENTRANCE CABLE
SIGNAL CABLE
VARNISHED CAMBRIC CABLE
WEATHERPROOF WIRE

All types of Building Wire and all kinds of Special Cables to meet A.S.T.M., A.R.A., I.P.C.E.A., and all Railroad, Government and Utility Companies' Specifications.

CRESCENT
INSULATED WIRE  & CABLE CO. INC.
TRENTON, NEW JERSEY

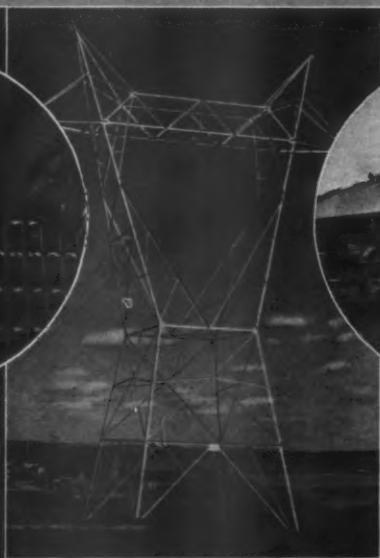


Varnished Cambric
Lead Encased
POWER CABLE

BLAW-KNOX PRODUCTS for PUBLIC UTILITIES



STEEL GRATING



TRANSMISSION TOWERS



GAS CLEANERS



STEEL BUILDINGS



CLAMSHELL BUCKETS

Thousands of miles of transmission towers... structural work necessitating highly specialized fabrication... enormous areas of Electroforged open flooring... standard steel buildings for all uses... gas cleaners for natural gas lines... steel forms for concrete tunnels, walls, etc.,... steam purifiers, desuperheaters... clamshell buckets... and other products of Blaw-Knox manufacture are at work for the Public Utilities of America.

The fact that Blaw-Knox Products are in accord with

the rigid standards of Public Utility purchasing is proof not only of the merit of the products themselves but of the house behind the products.

BLAW-KNOX COMPANY

2057 FARMERS BANK BUILDING, PITTSBURGH, PA.

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PERMAFLECTOR LUSTROLIER

No. 5100

Lustrolier No. 5100 is designed particularly for the lighting of department stores especially the main floor where the majority of customers are received and receive their first impression of a wide variety of merchandise.

BEFORE

The Northtown store of Wieboldt Stores, Inc., Chicago, showing the lighting from the old style glaring direct lighting fixtures



Every live up-to-date merchant recognizes that good lighting is his most effective salesman. It is a well known axiom that "Merchandise well displayed is half sold." With this thought in mind, thousands of merchants all over the country are modernizing their stores and good illumination should be their first step in this process.

Permafector Lustrolier No. 5100 is the answer to the modern merchant's illumination problem. Predominantly an indirect lighting fixture, it also has a low direct lighting component transmitted through a large stippled heat resisting glass roundel in the bottom member.

Equipped for use with 750, 1000, or 1500 watt lamp, Lustrolier No. 5100 offers the public utility a lighting fixture which not only gets business, but builds up the lighting load. Recommend Lustrolier No. 5100 for the modernization of department stores.

AFTER

The same store after installing Lustroliers No. 5100. Note the absence of glare and sharp shadows, but in their place soft evenly diffused illumination



PITTSBURGH REFLECTOR COMPANY

OLIVER BUILDING



PITTSBURGH, PA.

See the exact temperature through these "EYES" . . .



*Through Taylor Dial Thermometers read clearly . . .
accurately . . . unflinching . . . the temperature-picture
at important points in power production*

WHERE no permanent record is
needed . . . where no comparison
temperatures during a twelve or
twenty-four-hour period is desired . . .
where there must be a constant
check on temperatures, use Taylor Dial
Thermometers to watch them for you.
Taylor Dial Thermometers meet ex-
isting demands for accuracy, durability
and long service. They are simple and
easy in design, and are the product of
men who combine knowledge of
industrial and scientific needs with super-
ior skill in construction.
The Mercury-Actuated type of ther-

mometer is particularly designed for use
where operating conditions are severe.
It is efficient anywhere within limits of
minus 40° F. and plus 1000° F.

The Vapor-Actuated type is especially
useful where very open scale divisions
are needed over a restricted working
temperature range. It can be used for
temperatures up to 600° F.

Because of the fine accuracy and un-
usual durability of all Taylor Dial Ther-
mometers, users find that it is worth
while to standardise on them through-
out their plants. Discuss their use with
a Taylor Representative, as we hope

you will talk over any of your problems
of temperature, pressure or flow control.
See him about details on Taylor indicat-
ing, recording and controlling instru-
ments and on Taylor Control Systems
specifically for use in Power Plants and
in the distribution of power. Taylor
Instrument Companies, Rochester, N.Y.,
or Toronto, Canada. Manufacturers in
Great Britain—Short & Mason, Ltd.,
London, England.

Taylor

Indicating / Recording • Controlling

**TEMPERATURE, PRESSURE and
FLOW INSTRUMENTS**

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VARI-TYPER

COMPOSING MACHINE

Type instantly interchangeable. • Spacing variable vertical and horizontally. • Carbon paper or cloth ribbons. • Print Bold Faced Headings.

[No other machine like it at any price. Saves its cost quickly.
Essential wherever stencil duplicators or offset photography
is employed. Beautiful work. " " " "]

— Write for Demonstration —

RALPH C. COXHEAD CORPORATION

MANUFACTURERS

17 PARK PLACE " NEW YORK, N. Y.

RAY-O-VAC

Dependable service—long hours
of it—on and off—off and on! Utilities
put flashlights and batteries to the sever-
est tests, but Ray-O-Vac industrial flash-
lights and batteries have proven they can
take it. That's why each year more and more
utilities specify "Ray-O-Vac".



Pictured here, the famous guar-
anteed foolproof Rotomatic
Switch—exclusively a Ray-O-
Vac feature.

RAY-O-VAC COMPANY

Formerly FRENCH BATTERY COMPANY

MAIN OFFICES and PLANT—MADISON, WISCONSIN

Additional Factories at Clinton, Massachusetts; Lancaster, Ohio

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Inside Information On the Burnham Gas Boiler

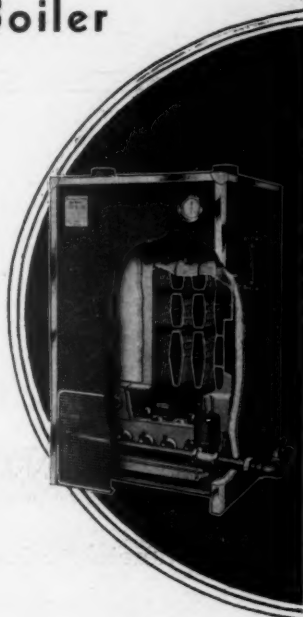
So much stress is put these days on dolling up boilers to make them *look good*, that their *make-good* is all too often secondary.

That's not so with this Burnham. Its *make-good* was first-and-foremost proven. A. G. A. approved under the latest regulations.

We are not going into details here, of why its *make-good* is so good. All that is clearly shown in the catalog, to which you are welcome.

Glad to submit for your examination and check up, records of its economy performance in the field. A performance that has lived up to the shop test, unbelievable as that may seem.

Send for catalog. Get the facts. See for yourself.

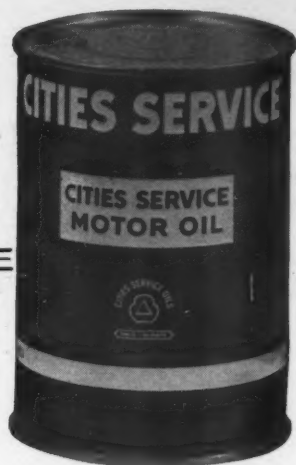


Burnham Boiler Corporation

Manufacturers of Heating Equipment Since 1873

IRVINGTON, NEW YORK
ZANESVILLE, OHIO

Representatives in All Principal Cities of the United States and Canada

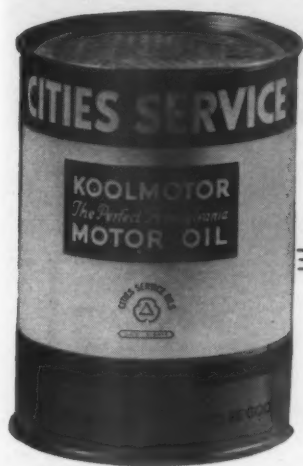


The CREAM of **MID-CONTINENT CRUDES**

Moderately priced, Cities Service Motor Oil is the choice of particular motorists who want an economical lubricant—yet one that does not sacrifice performance to price.

This high-quality, completely dependable motor oil is refined from the choicest crudes of the great Mid-Continent fields. With it you will get the performance to which you are entitled and at the same time you will save money.

CITIES SERVICE *Motor Oil*



The PERFECT PENNSYLVANIA OIL

Refined with all the care and skill that are the result of 73 years of refining research and experience, this super-lubricant gives you triple-duty protection—it seals, cools, lubricates.

Koolmotor Oil not only resists heat, but actually carries heat away from friction surfaces. It is the perfect Pennsylvania oil and with it in your crankcase you are assured of care-free miles of motoring enjoyment.

K O O L M O T O R

Motor Oil



TAYLOR
COMPLETE COMBUSTION
UNIT

TAYLOR STOKERS
AECO FURNACES
(Water Cooled)

AECO ASH HOPPERS

*Economically
Correct*

AND WE CAN PROVE IT!

AMERICAN ENGINEERING COMPANY
PHILADELPHIA • PENNSYLVANIA



"TO paint the lily," Shakespeare pointed out, is an entirely superfluous proceeding. Quality speaks for itself, be it in lilies . . . or water meters.

The Quality of Trident and Lambert Water Meters needs no superlatives. It's simply an inherent part of every Neptune product. But—it is of vital importance to HAVE that Quality in every water meter you buy . . . if you want sustained accuracy, low maintenance costs, protection against deterioration and against overnight changes in model or improvements that make ordinary meters "obsolete."

For these Quality Water Meters—these "*Cash Registers of the Water Works Field*"—are built on the principle of interchangeability, and they will never become obsolete, in fact or in theory. Neptune Meter Company (Thomson Meter Corp.), 50 West 50th Street (Rockefeller Center), New York City . . . also . . . Neptune-National Meters, Ltd., Toronto, Canada. *A type for every purpose.*

NO PAINTERS NEEDED

MORE THAN 6 MILLION
MADE AND SOLD THE WORLD
OVER...PROVES THE QUALITY OF

Trident
and Lambert Water Meters



Trident and Lambert Water Meters, Split Case Type—for installation where frost is not apt to cause damage.

DETAILS THAT MAKE Wagner

STUD-BUSHING-TYPE TRANSFORMERS

Superior ARE:



Illustration of a 5 kva, 2400 to 120/240 volt, 60 cycle stud-bushing-type Wagner distribution transformer with a section of the tank wall cut away to reveal core and coils.

1. All coils are form-wound — thoroly dried and treated before assembling the core iron.
2. End-turns are extra-heavily insulated and definitely spaced to resist line disturbances.
3. Taps are brought out from the middle of windings where they do not interfere with the sun-resisting design of the coils.
4. Core iron is built from non-aging silicon steel specially manufactured for transformers.
5. Core iron laminations are cut with the grain of iron, the direction of which the magnetic flux encounters the least resistance.
6. All parts of the core and coils are completely immersed in transformer oil.
7. Tanks are formed of copper-bearing sheet-steel.
8. Tanks are electrically welded into an integral whole.
9. Tanks and covers are sandblasted outside and inside.
10. Every tank receives three coats of special transformer paint — selected for its adhesive and penetrating properties, its longevity, and its appearance.
11. Porcelain bushing flashover values coordinated with the transformer insulation strength.
12. Bushings are designed for easy removal without lowering transformer from pole or platform.
13. Tight-fitting bushings prevent syphoning of oil.
14. No solder is necessary for connecting transformers to line.
15. Transformers are shipped filled with oil and ready for service.

Write for Wagner Bulletin 180 which completely describes Wagner distribution transformers.

TD336-

Wagner Electric Corporation
6400 Plymouth Avenue, Saint Louis, U.S.A.

Motors

Transformers

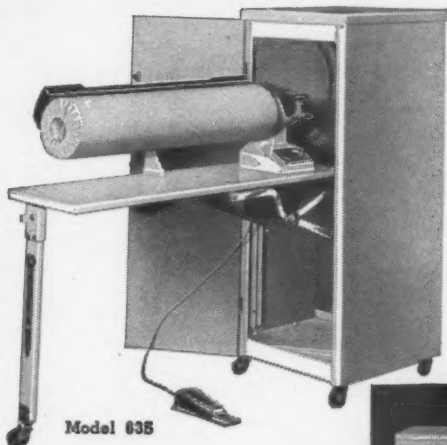
Fans

Brakes



FOLD-A-WAY

boosts sales of IRONERS and current (1230 watts per hour)



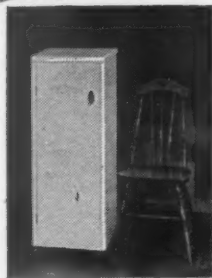
Model 635

Economy of floor space appeals to housewives everywhere

Takes No More Floor Space Than Kitchen Chair

It's easier to sell what the housewife wants and cannot get in any other ironing machine. The Thor Fold-A-Way also gives her all three types of control—knee, foot and finger-tip. This patented space-saving construction gives the Thor dealer a powerful, exclusive merchandising advantage.

With only four per cent saturation, ironers afford a big, unworked field for merchandising profit. Find out how Thor's effective promotional helps and popular-priced rotary line are boosting ironer sales close to those on washers for many aggressive dealers. Send for all the facts today.



Balanced, easy lifting. Shoe pulls up with one finger. Self-locking, rigid, folding leg and table.



Address

E. N. HURLEY, JR., PRESIDENT
HURLEY MACHINE COMPANY
54th Ave. and Cermak Road, Chicago, Ill.

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MERCOID SWITCHES
ELIMINATE CONTACT
TROUBLE. THEY ARE
NOT AFFECTED BY
DUST, DIRT OR
CORROSION.



MERCOID TEMPERATURE AND PRESSURE CONTROLS

Cover a wide range of requirements. ● The outside double adjustment and calibrated dial are noteworthy time saving features. ● The operating range is easily determined without any calculations or guesswork. ● Equipped with mercury contact switches. ● Write for catalog No. 100-PA, containing complete information.

THE MERCOID CORPORATION
4201 BELMONT AVENUE • CHICAGO, ILLINOIS



IT PAYS TO GET THE BEST

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PROFESSIONAL DIRECTORY

• This page is reserved for engineers and engineering concerns especially equipped by experience and trained personnel to serve utilities in all matters relating to rate questions, appraisals, valuations, special reports, investigations, design and construction. " "

Ford, Bacon & Davis, Inc.

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CONSTRUCTION
OPERATING COSTS

Engineers

VALUATIONS & REPORTS

RATE CASES
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INTANGIBLES

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PHILADELPHIA

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ENGINEERS

VALUATION DEPARTMENT
APPRAISALS AND RATE QUESTIONS

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NEW YORK

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BLACK & VEATCH

CONSULTING ENGINEERS

Appraisals, investigations and reports,
design and supervision of construction
of Public Utility Properties

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KANSAS CITY, MO.

JACKSON & MORELAND

ENGINEERS

PUBLIC UTILITIES—INDUSTRIALS
RAILROAD ELECTRIFICATION
DESIGN AND SUPERVISION—VALUATIONS
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EARL L. CARTER

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REGISTERED IN INDIANA AND NEW YORK

PUBLIC UTILITY
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Appraisals—Rate Investigations
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EDWARD J. CHENEY

ENGINEER

Public Utility Problems

61 BROADWAY

NEW YORK

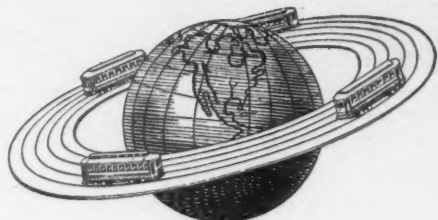
SPOONER & MERRILL, INC.

Consulting Engineers

Design—Supervision of Construction
—Reports—Examinations—Valuations

20 North Wacker Drive

Chicago, Ill.



THE Transit Industry, even in the most trying times, has never relaxed its will to progress. The evidence of this may be seen in the many expansion and modernization activities throughout the country.

This Organization has grown up with the Transit Industry and we shall be pleased to serve its new additions as we served the Industry as a whole for over 40 years.



BARRON G. COLLIER

INCORPORATED

CANDLER BUILDING, NEW YORK CITY

WITH OFFICES AND ASSOCIATED COMPANIES
THRU THE UNITED STATES, CANADA AND CUBA

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RLT

TH

LOCK THE STABLE DOOR *First!*

Corporations and industries have called us to help them present their stories to the public in labor troubles, or to legislators on undesirable legislation—sometimes when it is all but too late. Most things like that can be done much better before the difficulty arises.

The time for an industry or a company to win friends is *now*, before attacks gain strength through an unpopularity which is created and developed because of lack of understanding.

The time to equip employees, stockholders, customers, and the general public with honest facts and helpful information is *now*, before their morale is sapped by unanswered attacks or by apparently justified and unmet criticism.

The time to turn thousands of people to friends is *now*, before they take sides against the industry or corporation when they *should* be for it, and *would* be for it if they saw the whole picture.

The time to win the agreement of a legislator is before the opposition has gone

so far that he can listen to your logic only at the risk of his own political death.

Prolonged litigation, such as sometimes occurs in a major labor dispute or a controversy with some political authority, is expensive far, far beyond permanent Public Relations Service. That Public Relations Service, if intelligently administered and carried on as a vital part of the company's or industry's major policy, often will eliminate the occasion for such litigation, and in other cases will create a foundation on which a winning case can be built.

Many of the ablest attorneys call in Public Relations Counsel for their clients, relating that service to their own.

The executive of any corporation or industry can discuss its public relations situation and problems with us confidentially, and without obligation, if he believes it may need experienced help such as we have to offer.



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